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PSYCHODIDAE
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4. PSYCHODIDAE

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(With Plates XXIII and XXIV)

THE collection comprises 64 specimens distributed among 6 genera and 27 species; 24 of the species are new, all but one of these belonging to the subfamily Psychodinae; with few exceptions the specimens were gathered by Dr. Edwards. The collection provides a notable addition to the known Psychodid fauna of Tropical Africa, from which 37 species had so far been described, 23 of these belonging to the genus *Phlebotomus*; the additions now made bring the total to 61 species, the complete list being as follows:

BRUCHOMYIINAE

Bruchomyia *edwardsi* sp. n. *Nemopalpus* *capensis* Edw.

PHLEBOTOMINAE

<i>Phlebotomus</i>	<i>papatasii</i> Scop.	<i>yusafi</i> Sint.
	<i>minutus</i> Rond.	<i>congolensis</i> Bequ. & Walr.
	<i>africanus</i> Newst.	<i>katangensis</i> Bequ. & Walr.
	<i>squamipleuris</i> Newst.	<i>adleri</i> Theod.
	<i>ingrami</i> Newst.	<i>buxtoni</i> Theod.
	<i>simillimus</i> Newst.	<i>affinis</i> Theod.
	<i>schwetzi</i> Ad. T. & P.	<i>transvaalensis</i> Sint.
	<i>schoutedeni</i> Ad. T. & P.	<i>dureni</i> Parr.
	<i>collarti</i> Ad. T. & P.	<i>viduus</i> Parr.
	<i>decipiens</i> Theod.	<i>martini</i> Parr.
	<i>rodhaini</i> Parr.	<i>longicuspis</i> Parr.
	<i>freetownensis</i> Sint.	

TRICHOMYIINAE

Sycorax *africanus* Tonn.

PSYCHODINAE

<i>Psychoda</i>	<i>ingrami</i> Tonn.	<i>reducta</i> sp. n.	<i>modesta</i> sp. n.
	<i>nana</i> Tonn.	<i>acuta</i> sp. n.	<i>lutipennis</i> sp. n.
	<i>alternata</i> Say.	<i>deviata</i> sp. n.	<i>albida</i> sp. n.
	<i>savaiensis</i> Edw.	<i>amphorica</i> sp. n.	<i>plumosa</i> sp. n.
	<i>maxima</i> sp. n.	<i>undulata</i> sp. n.	<i>dentata</i> sp. n.
	<i>pseudomaxima</i> sp. n.	<i>bilobata</i> sp. n.	<i>dubitata</i> sp. n.
<i>Clytocerus</i>	<i>africanus</i> Tonn.	<i>fasciatus</i> sp. n.	<i>carbonarius</i> sp. n.
<i>Telmatoscopus</i>	<i>albipunctatus</i> Willist.	<i>edwardsi</i> sp. n.	<i>crassiascoidatus</i> sp.
	<i>fuscipennis</i> Tonn.	<i>fuscus</i> sp. n.	
	<i>pallidus</i> (Tonn.)	<i>pectinatus</i> sp. n.	
<i>Brunettia</i>	<i>pectinata</i> Tonn.	<i>grahami</i> Tonn.	<i>albonotata</i> Brun.
	<i>splendens</i> Tonn.	<i>gloriosa</i> sp. n.	<i>obscura</i> sp. n.

The main feature of this list is the absence of *Pericoma* and *Trichomyia* which are genera with a wide distribution in other regions of the world. The most notable addition is that of *Bruchomyia*, so far known only from the neotropical region; its validity will be discussed below.

The abundance of the species of *Phlebotomus* included in the list (the numerous varieties have been omitted) may not give a true idea of the dominance of this genus in the Ethiopian Psychodid fauna. On account of their haemato-phagous habits these flies have been more assiduously collected and more closely studied. Judging from the large number of species of *Psychoda* brought back by Dr. Edwards, it is very likely that this genus, as at present conceived, will prove to be the dominant one. This is almost everywhere the case, although a glance at any list or collection may not bring this out. These very small, fragile flies are as a rule completely neglected by collectors, moreover they require a very painstaking study at high magnification in order to differentiate the very closely related species; a considerable number of these have been overlooked even in the palaearctic region.

Clytocerus is also well represented in the above list; this genus is found in the palaearctic and nearctic regions as well.

Telmatoscopus has a world-wide distribution with the exception of temperate South America. *Brunettia* is restricted to the Ethiopian, Oriental, and Australian regions.

In order to facilitate the comprehension of the following descriptions, I shall draw attention to a few morphological points.

Venation: The interpretation which I have adopted since 1922 is shown in Figs. 5 and 48; a few of the recent writers on this family have not followed it as regard the last two long veins which I name *M₄* and *Cu* and not *Cu₁* and *Cu₂*. A study of the most primitive genera such as *Nemopalpus* and *Bruchomyia* shows distinctly that *M* is four-branched and *Cu* single in these genera (Fig. 5), and in other fossil forms like *Eophlebotomus*; this last vein is there definitely thicker and convex, but in the more recent genera and especially those of the Psychodinae this is not the case: some secondary developments have taken place which obscure the original condition. A comparison of Figs. 5 and 48 will make the homologies clear.

Genitalia: The terminology of the various parts of the male hypopygium is given in Fig. 6. The hypopygium being inverted after emergence, the parts situated below belong to the tergum; the sternum is usually reduced to a very narrow bridge. When the aedeagus is symmetrical the parameres are sometimes present, Fig. 12, but when it is asymmetrical, as is the case mostly in *Psychoda*, the parameres, if present, are not at all easily differentiated from the rest of the usually complicated aedeagus.

In many species of *Psychoda* there are, under the aedeagus (after the

inversion), a couple of lobes which may be glabrous or pubescent, fleshy or sclerotized or even united in a single piece; these I call here "internal lobes" (Fig. 70). They are sometimes present when the parameres are well developed and therefore are quite distinct from these.

In the case of an asymmetrical aedeagus, it sometimes happens that in the males of one species, the various pieces composing this organ are not orientated in the same way; in some specimens they are turned to the left in others to the right, so that one is the mirrored image of the other, the order of the corresponding pieces being the same from the top to bottom. It is difficult to conceive how this can occur, but I have observed it in a number of species of *Psychoda* and in some cases in individuals obtained through breeding from the same egg batch. This peculiar feature has to be kept in mind when comparing slides of genitalia with published figures; at first sight they may not appear to correspond because of the inverted aedeagus.

The small processes inserted at the end of the cercopods which I have designated in the past as tenacles (not "tentacles" as mentioned by a slip of the editor in my paper on the Psychodidae of Chile) are here termed "retinacula" a term proposed by Eaton in one of his manuscript papers.

In most species of the Psychodinae, there is on the internal face of the subgenital plate of the female a small process provided with sensory papillae or setulae; I call it here "internal sensory organ."

BRUCHOMYIINAE

Bruchomyia Alexander

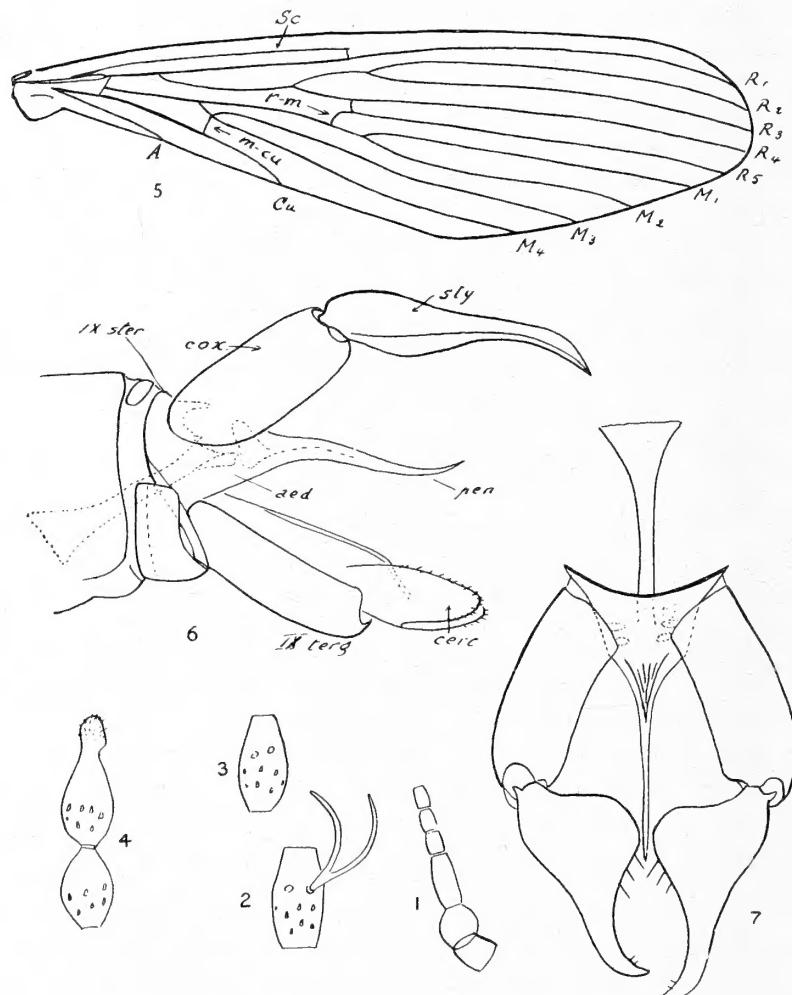
THREE species of this genus have so far been made known; they are all restricted to South America; the genotype is *B. argentina* Alex. This genus is distinguished from *Nemopalpus* by the higher number of segments in the antennae and the greater length of vein *Cu*. However, the number of segments varies according to species and sometimes according to sex from a minimum of 27 to a maximum (in the new species described below) of 113. This character of the number of antennal segments is therefore unsafe as a generic criterion; there would not be any sound reason to separate a group with 16 segments as in *Nemopalpus* from another with 27, 28, 29, 30 or 113 segments were it not for a short *Cu* in the first and a longer one in the latter. Furthermore, as more undescribed species turn up, we may well find that all intermediate lengths of *Cu* will be represented in the series; in that case only one course would remain open, that is to fuse the two genera.

The male genitalia offer no clue as regard the separation into two genera. The hypopygium of *Bruchomyia* is more primitive, the sternite and the coxites being all independent from one another whereas in some species of *Nemopalpus*

they are all fused in a single capsule; but in other species of this latter genus the hypopygium is similar to that of *Bruchomyia*. No special affinity is evident between these species, which are scattered all over the world.

***Bruchomyia edwardsi* sp. n.**

♂. Integument and vestiture ochraceous yellow; wing vestiture fairly scanty without darker tufts or markings. Vestiture of thorax and abdomen rather short, not dense, ochraceous.



Bruchomyia edwardsi sp. n. Figs. 1 to 7.
 (1) base of antenna; (2) median segment, only one asciid shown; (3) 85th antennal segment; (4) last two antennal segments; (5) wing; (6) side view of hypopygium; (7) aedeagus and forceps from above.

Eyes emarginated at the base of the antennae, somewhat approximated on the frons, no trace of eye bridges.

Antennae 113-segmented; 1st segment (Fig. 1) as long as wide, 2nd subspherical, 3rd subcylindrical, $2\frac{1}{2}$ times as long as wide, the following ones cask-shaped and a little longer than wide, the median ones relatively more elongate (Fig. 2); towards the end of the antennae the segments are more tapering distally (Fig. 3), the last one pyriform with a swollen apiculus (Fig. 4). Ascoids two-branched, in pairs on segments 4 to 113; 3 ascoids on the third. Hairs of verticils thin, scanty, not forming distinct campanuliform verticils.

Palpi darker than the antennae; formula of the five segments as follows: 7-13-23-27-91. Mouth parts half the length of the head, labella rounded and fleshy.

Wing (Fig. 5) elongate, well rounded at apex where the tip of R_4 is situated, Sc_1 absent, $m-r$ curved and placed well before the posterior fork, $m-cu$ straight and placed just at the fork of M_3M_4 , Cu_1 long (one-third of the wing length). Vestiture composed of fine curved rather scanty hairs, fringe relatively short, its colouration uniform like that of the body.

Legs very long and thin, the hind ones the longest, tibiae without fringe but with a few regularly spaced short bristles, no tibial spurs, tarsi of all the legs shorter than the tibiae; hind claws normal, equal to each other, pubescent, almost straight, a small empodium present.

Hypopygium (Figs. 6-7) inverted, coxites subcylindrical, a little over twice as long as wide, styles somewhat longer and with a conspicuous basal internal expansion, apex claw-like; sternite and aedeagus united in one piece without trace of suture between them, intromittent organ simple, symmetrical, elongate and ending in a sharp point; ninth tergite somewhat longer than wide, cerci in form of oval lamellae.

Wing length 5.3 mm.

RUWENZORI: Mobuku Valley, 7300 ft., Holotype and one paratype ♂, taken on a dead and mostly decayed, but still standing tree.

PHLEBOTOMINAE

Phlebotomus Rondani

The material from the Ruwenzori Expedition consisted of 1 ♂ and 3 ♀; they agree fairly well with *Ph. congoensis* Beq. & Walr., var. *distinctus* Theod. from the Gold Coast and the Sudan; however, the number of teeth in the pharynx is not quite as high, 20 instead of 24.

The specimens are from Kilembe, 4500 ft., taken in a hollow tree in company with large numbers of Cecidomyiidae.

PSYCHODINAE

KEY TO ETHIOPIAN GENERA OF PSYCHODINAE

1. Antennae with 16 or 15 segments; the last segments not diminutive or united to each other 2.
- Antennae with 14, 15 or 16 segments; the last ones diminutive and often united to each other *Psychoda* Latr.
2. Wing membrane as well as the veins covered with hairs or scales *Brunettia* Annand.
- Hairs on the veins only 3.
3. Flagellar segments barrel-shaped or fusiform without very pronounced basal bulb 4.
- Flagellar segments with notable basal bulb, often more bulging on one side and with a distinct distal neck *Telmatoscopus* Eaton
4. Number of antennal segments equal in the two sexes *Pericoma* Wlk.
- Antenna of male 15-segmented; that of the female 16-segmented; third segment of the ♂ with a typical undulated brush; R_4 ending at or very near the tip of the wing; first basal cell often elongated *Clytocerus* Eaton

KEY TO ETHIOPIAN SPECIES OF PSYCHODA

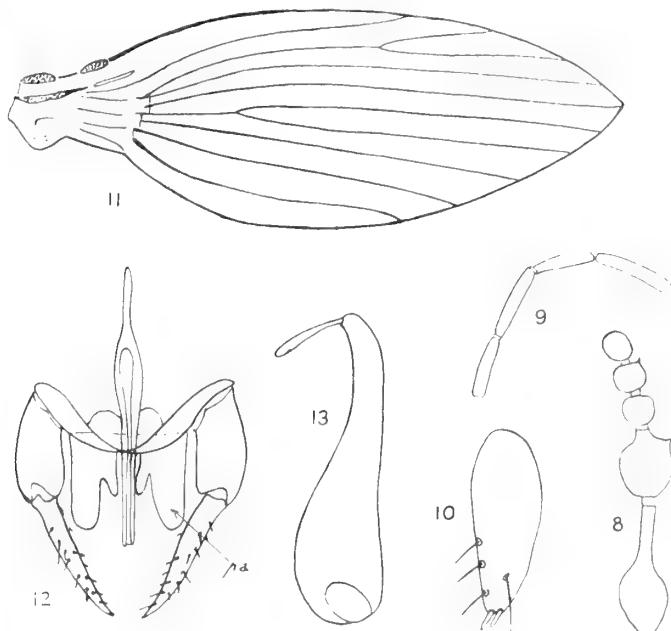
1. All flagellar segments elongate amphora-shaped *dubitata* sp. n.
- At least the median segments with basal spherical bulb and long distal neck 2.
2. Antennae 16-segmented 3.
- Antennae 15- or 14-segmented 10.
3. None of the last antennal segments united together 4.
- The 14th and 15th antennal segments united together 7.
4. Origin of stem of anterior fork placed somewhat before apex of anterior basal cell; genitalia Fig. 23 *modesta* sp. n.
- Origin of that stem on the apex of the cell 5.
5. Labial lobes with two terminal cones; large blackish species; genitalia Fig. 12 *maxima* sp. n.
- Labial lobes with at least four terminal cones 6.
6. Wing at least three millimetres long; dark species; genitalia Fig. 19 *reducta* sp. n.
- Wing much shorter; pale brown species; genitalia Fig. 79 *plumosa* sp. n.
7. Small white species with head and base of antennae dusky; last antennal segment pyriform; subgenital plate of ♀ without large *internal* lobes *albida* sp. n.
- Not all the above characters together, large species 8.
8. Whitish species with pale integument; genitalia Figs. 38 and 40 *undulata* sp. n.
- Darker species 9.
9. 13th antennal segment with long neck; a sensory cone on segment 15; genitalia Figs. 44 and 46 *amphorica* sp. n.
- 13th segment with short neck; no sensory cone on segment 15; genitalia Figs. 49 and 52 *bilobata* sp. n.
10. Antennae 15-segmented, the 14th sometimes represented only by a rudiment 11.
- Antennae 14-segmented; no rudiment of segment between the last two 15.
11. All the last antennal segments well separated from each other 12.
- Some of the last segments united together 13.
12. Large blackish brown species; genitalia Fig. 28 *pseudomaxima* sp. n.
- Medium size species; genitalia Figs. 32 and 35 *deviata* sp. n.
13. The last two segments united; ascoids with three anterior branches; wing forks complete at the base *savaiensis* Edw.
- The last two segments separated; ascoids with only one anterior branch; forks incomplete at the base 14.
14. Wing forks complete at the base; ascoids with two short anterior branches *alternata* Say.
- These forks incomplete at the base; ascoids with only one long anterior branch *nana* Tonn.
15. 13th segment elongate, ovoid, well separated from the 14th; ascoids with only one anterior branch *ingrami* Tonn.
- 13th segment subspherical, united to the 14th 16.

16. Origin of stem of anterior fork placed before apex of anterior basal cell; genitalia
 Fig. 74 *latipennis* sp. n. 17.
 Origin of stem at or after the apex of this cell 17.
 17. Origin of stem at apex of cell; genitalia Figs. 63 and 66 *dentata* sp. n.
 Origin of stem past apex of cell; genitalia Fig. 70 *acuta* sp. n.

Psychoda maxima sp. n.

A large, uniformly dark brown species.

♂. Integument of body and appendages brown, somewhat paler on the sides of the thorax; vestiture uniformly blackish brown, fairly dense on the thorax and abdomen.



Psychoda maxima sp. n. Figs. 8 to 13.

(8) tip of antenna; (9) palpi; (10) labial lobe; (11) wing; (12) aedeagus and forceps from above; (13) cercopod, same scale as Fig. 12.

Eye-bridges separated by the width of two facets. Antennae 16-segmented, 1st segment $1\frac{1}{2}$ times as long as wide, 3rd elongate, amphora-shaped, 13th with a diminutive neck and a conical sensorium on one side, the last three small, well separated from each other, and from the 13th, the 14th and 15th as long as wide, subequal to each other, the 16th somewhat smaller and a shade longer than wide (Fig. 8). Ascoids in pairs on segments 3 to 13 and of the usual Y type.

Palpi (Fig. 9) thin and long, formula: 10-12.5-10-14.5. Lobe of the labium (Fig. 10) with only two distal cones and a series of three setae on one side.

Wing ovate-lanceolate (Fig. 11), two calli at the base of costa, origin of the stem of R_2+3 placed before the apex of the basal cell, posterior fork nearer to this cell than to the posterior fork. Vestiture uniformly dark brown without any tuft, erect hairs present on the whole length of all the veins except on R_5 and M_4 , longer on the base of Cu .

Hypopygium (Figs. 12-13). Sternite arcuate and fairly developed, coxites about twice as long as wide, not bulging on the side, styles half as long again, almost straight, elongate-conical, their distal two-thirds with numerous sensory setulae, parameres large, in shape of mittens with the thumb inwards, penis symmetrical with its sides thickened which at first sight appear to be independent but are in reality connected by a membrane; 9th tergite wider than long, with one large pseudo-spiracular opening near the posterior border; cercopod half as long again, forficulate, its incrassate basal part extending to its middle, its distal shaft gradually tapering to the tip which carries one long retinaculum turned completely inward so that the tips of the two can meet.

Wing length 4.2 mm.

RUWENZORI: Namwamba Valley, 10,200 ft., type ♂, and 13-14,000 ft., paratype ♂.

Psychoda reducta sp. n.

A medium-sized, completely dark species.

♀. Integument brown, thoracic pleurae somewhat ochraceous, vestiture of body and appendages uniformly brown.

Eye-bridges separated by a distance equal to the width of four facets. Antennae 16-segmented, the 1st segment about half as long as wide, 3rd elongate (Fig. 14), amphora-shaped with its base obconical, neck of median segments longer than the bulb, 13th without neck and with one sensory cone, last three segments well separated from each other, gradually diminishing in size, the 15th with two sensory cones (Fig. 15). Ascoids in pairs on segments 3 to 13, and of the usual Y type.

Palpi (Fig. 16) with the first three segments subequal, the last one thinner and half as long again. Lobes of the labium (Fig. 17) with two long lateral setae, 3-4 terminal cones and one much below on its disc.

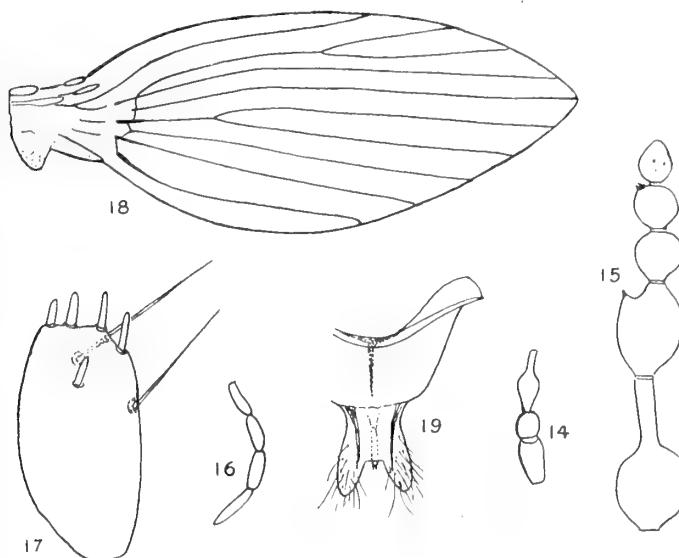
Wing ovate-lanceolate (Fig. 18) very much like that of *Ps. maxima*, distance between the two forks greater by one-half than that between the posterior fork and the apex of the basal cell; second callus on the base of the costa present.

Subgenital plate (Fig. 19) longer than wide, its distal part constricted at the base and ending in two well-marked lobes; internal sensory organ elongate claviform and with two terminal sensory setae. Ovipositor at least twice as long as the subgenital plate, curved upwards and pointed.

Wing length 3 mm.

RUWENZORI: Namwamba Valley, 8300 ft., 1 ♀ (type).

The specimen may be a female of *Ps. maxima*; the antennae, palpi and wing correspond, but the labium does not in the slightest; however the specific characters exhibited by that organ may not be at all reliable. They have been



Psychoda reducta sp. n. Figs. 14 to 19.

(14) base of antenna; (15) tip of antenna; (16) palpi; (17) labial lobe;
(18) wing; (19) subgenital plate of ♀.

but recently introduced in the taxonomy of the genus by Del Rosario and have not been investigated extensively enough to be sure that a sexual dimorphism does not exist here in some cases. If this specimen is a female of *Ps. maxima* its smaller size (3 mm. versus 4.2 mm.) is puzzling; I think that without exception, at least in a definite locality, the females in this genus are at least equal in size to the males and in most cases they are larger.

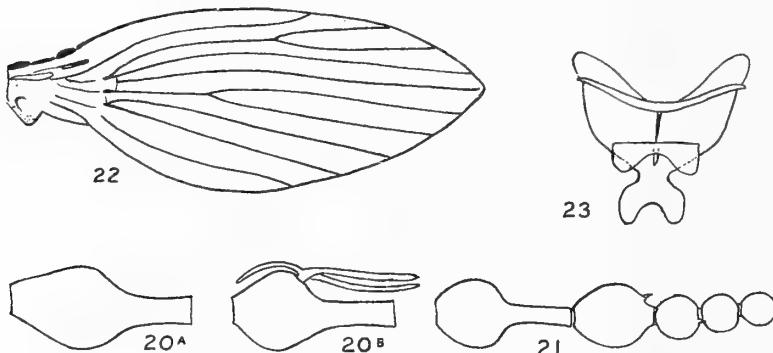
***Psychoda modesta* sp. n.**

A small species with integument and vestiture uniformly ochraceous brown.

♀. Eye-bridges almost contiguous. Antennae 16-segmented, 3rd segment amphora-shaped (Fig. 20a) but not specially elongate, the following ones with the neck as long as the basal bulb (Fig. 20b), 13th with the trace of a neck and with a sensory cone, last three diminutive, well separated from each other.

spherical and gradually diminishing in size to the last, the 15th with a lateral sensory cone (Fig. 21). Ascoids Y-shaped, present in pairs on segments 3 to 13. Palpi and labial lobes not studied.

Wing ovate-lanceolate, two basal costal calli, origin of stem of anterior fork before apex of basal cell, this one distinctly longer than the posterior basal



Psychoda modesta sp. n. Figs. 20A to 23.
(20A) third segment of antenna; (20B) median segment, only one ascoid shown;
(21) tip of antenna; (22) wing; (23) subgenital plate of ♀.

cell. Posterior fork nearer the anterior one than to the basal cell. Erect hairs rubbed off.

Subgenital plate with a strong constriction at the base of the terminal lobes which are well separated; two semicircular lobes on the underside of the plate and between them the median internal cylindrical sensory organ. Ovipositor normal, pointed.

Wing length 2.25 mm.

RUWENZORI: Bwamba Pass (west side) 5500-7500 ft., 1 ♀ (type).

Psychoda pseudomaxima sp. n.

A large, completely blackish-brown species.

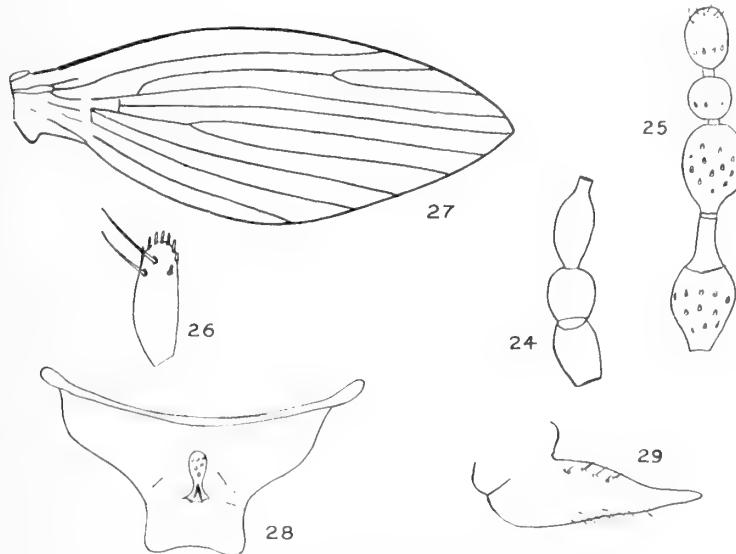
♀. Integument brown, the front femora paler brown, thoracic pleurae ochraceous; vestiture uniformly brown with greyish reflections in certain lights.

Eye-bridges separated by a distance equal to the width of the bridge itself. Antennae 15-segmented, 1st segment somewhat longer than broad, 3rd amphora-shaped but not elongate (Fig. 24), the median segments rather fusiform with their neck of about half the size of the basal bulb on the distal end of which there is a conspicuous circular ridge, the 13th without neck, 14th and 15th diminutive (Fig. 25), the former spherical, the latter distinctly larger and ovoid,

Ascoids small, very little distinct, of the usual Y type, sometimes in pairs, sometimes single on segments 3 to 13.

Palpi formula: 5-10-12-15. Lobe of the labium (Fig. 26) with 8 sensory cones 6 of which only are distal, and with two long setae.

Wing ovate lanceolate (Fig. 27) costa with only one callus at the base, origin of the stem of R_2R_3 well past the apex of the anterior basal cell, posterior fork at the first third of the distance between the basal cell and the anterior fork. Vestiture uniform, without tuft, the rows of erect hairs as usual but longer on the base of Cu .



Psychoda pseudomaxima sp. n. Figs. 24 to 29.

(24) base of antenna; (25) tip of antenna; (26) labial lobe; (27) wing;
(28) subgenital plate of ♀; (29) ovipositor.

Subgenital plate (Fig. 28) wider than long, its distal half tapering but without the usual well-separated terminal lobes, median sensory organ of a similar type as that of *Ps. lucifuga*, not rod shaped, provided with a number of papillae; ovipositor short (Fig. 29), pointed, barely longer than the subgenital plate.

Wing length 3.9 mm. in holotype and 4.3 in paratype.

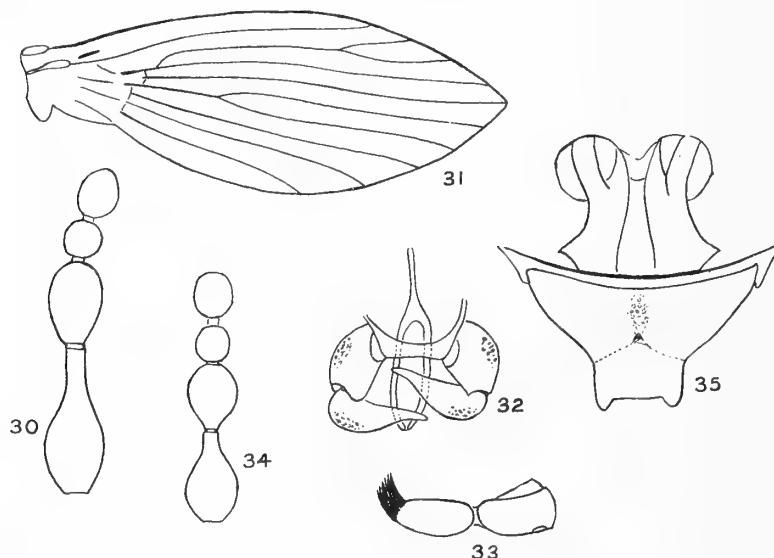
RUWENZORI: Namwamba Valley, 13-14,000 ft., type ♀, and 10,200 ft., paratype ♀.

This species comes very near *Ps. maxima*, its habitus and size are the same and the fact that the material at hand of *Ps. maxima* consists of two males, and that of *Ps. pseudomaxima* of two females from the same locality, made me at first consider that the specimens might belong to the same species. However the morphological differences, pointed out in the key, are too marked to allow one to entertain that opinion very long.

Psychoda deviata sp. n.

A medium-sized, completely black species.

♂. Distance between the eye-bridges distinctly greater than the width of the bridges (5-3.5). Antennae 15-segmented; first segment as long as wide, 3rd similar to the following ones, the basal bulb oval, the neck of equal length, a crease at the base of the neck, 13th ovoid, the last two diminutive, the 14th spherical, the 15th ovoid and a little bigger than the 14th (Fig. 30); ascoids of the usual Y type, in pairs on segments 3 to 13.



Psychoda deviata sp. n. Figs. 30 to 35.

(30) tip of antenna of ♂; (31) wing; (32) forceps from above; (33) 9th sternite and cercopod, same scale as Fig. 32; (34) tip of antenna of ♀; (35) subgenital plate of ♀.

Palpi with the first segment half as long as the second, second and third subequal, fourth a little longer. Lobe of labium very similar to that of *Ps. pseudomaxima* with 3-4 terminal sensory cones, 1 lateral cone, and 2 long setae.

Wing lanceolate (Fig. 31) only one callus at base of costa, origin of stem of anterior fork well beyond apex of anterior basal cell, posterior fork nearer to this cell than to anterior fork. Vestiture uniform, without tufts; rows of erect hairs present on all the veins, extending on the whole length of *R*₁ but only up to the middle of the wing on the other veins.

Hypopygium (Figs. 32-33): 9th sternite rather wide with rounded lateral corners; coxites rounded outside, a little longer than wide; styles longer by one

half, incrassate at the base, gradually tapering to a rather blunt tip. Cercopod not longer than the 9th tergite, elongate oval and ending in a tuft of numerous short curved setae replacing the usual retinacula; 9th tergite with only one large pseudospiracle.

Wing length 2·1 mm.

♀. Similar to male, the antennae shorter, 13th and 15th segments more spherical (Fig. 34). Subgenital plate (Fig. 35), wider than long, its distal third narrow with straight sides and ending in two widely separated small lobes, internal sensory organ ovoid and with a number of sensory pits. Ovipositor pointed and short, only half as long again as the subgenital plate.

RUWENZORI: Bwamba Pass (West side) 5500–7500 ft., 2 ♂ (including type), 1 ♀ (allotype).

This species is obviously related to *Ps. pseudomaxima* although the general habitus does not suggest a very close relationship. The structure of the antennae is fundamentally the same and so is the wing venation on account of the absence of the second costal callus and the position of the base of the stem of the anterior fork.

Psychoda undulata sp. n.

A whitish species with pale integument; some distinct dark markings on the distal half of the wing only. Vestiture white with a yellowish tinge, especially on the legs; integument of thorax and abdomen ochraceous yellow, that of the abdomen brown.

♂. Eye-bridges almost contiguous. Antennae 16-segmented; 1st segment almost twice as long as wide, 3rd not distinctly elongate or amphora-shaped, median segments with the neck as long as the basal bulb, 13th with the neck half as long only and with one long disto-lateral projection ending in a sensory cone. Last three segments diminutive, 14th and 15th united, 15th with a projection similar to that of the 13th, 16th pyriform (Fig. 36). Ascoids Y-shaped, in pairs on segments 3 to 13.

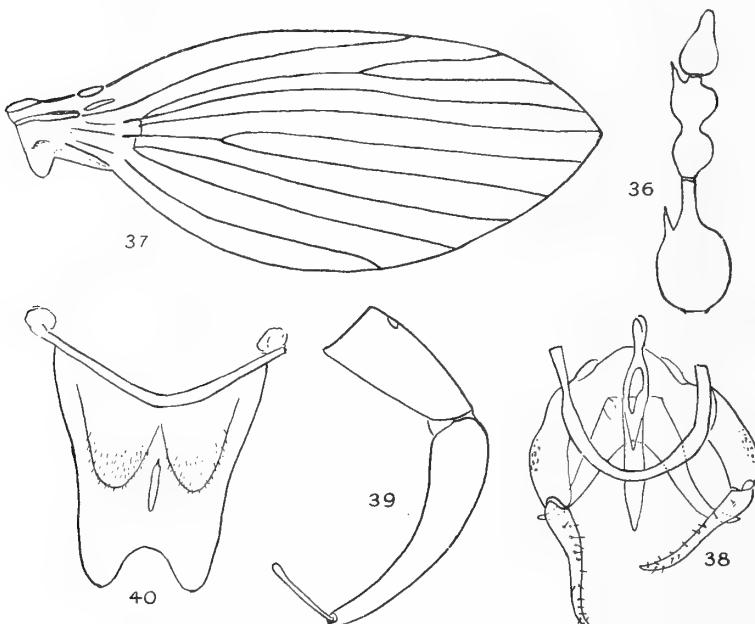
Palpi not studied.

Wing ovate (Fig. 37), otherwise venation very similar to that of *Ps. amphorica*, the difference being in the posterior basal cell which is almost equal in length to the anterior one instead of being distinctly shorter. Vestiture whitish, the erect hair rows reaching the tips of all the veins, completely absent on *R*₅ and *M*₄; at the base of the wing there is a very inconspicuous small dark tuft on the base of *R*₅ and on the costal callus. Beyond the middle of the wing there is a darkish transverse fascia broadly interrupted in the middle and extending on the anterior and posterior margins, it has the appearance of two distinct dark fasciae, one near the anterior and the other near the posterior

margin; there is also a smaller dark patch between the latter and the tip of the wing which also exhibits a small dark dot; these two markings do not extend on the fringe.

Legs yellowish.

Hypopygium (Figs. 38-39): 9th sternite well developed, coxites nearly three times as wide, styles a little longer, undulated, incrassate at the base and



Psychoda undulata sp. n. Figs. 36 to 40.

(36) tip of antenna; (37) wing; (38) aedeagus and forceps from above; (39) 9th tergite and cercopod, same scale as Fig. 38; (40) subgenital plate of ♀, inside view.

with numerous setulae; penis simple, two long parameres in shape of horns; cerci not quite twice as long as the 9th tergite, incrassate at base but not bulbous, nor forficulate, gradually tapering towards the extremity which carries a fairly long and thin retinaculum.

Wing length 3.13 mm.

♀ similar to male; subgenital plate (Fig. 40) decidedly longer than wide with two large pubescent basal lobes below (internal face), median sensory organ elongate and cylindrical; ovipositor normal.

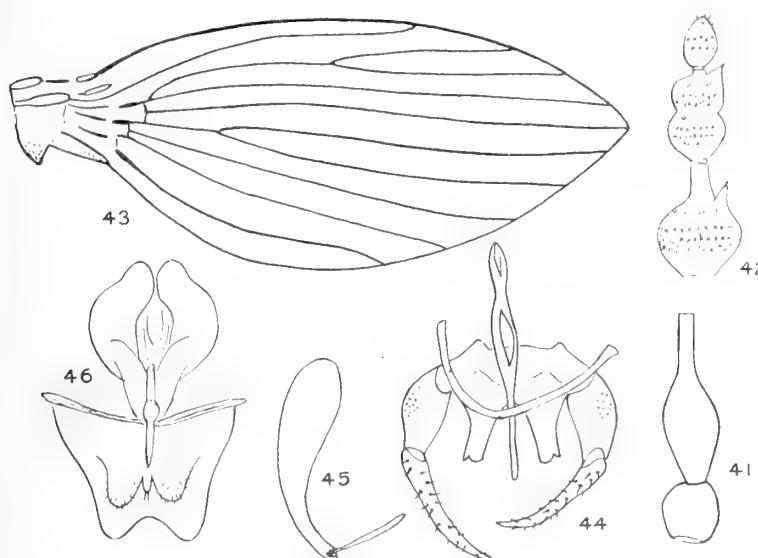
S.W. UGANDA: Mt. Mgahinga, 8000 ft., 3 ♂ (incl. type), 1 ♀.

Psychoda amphorica sp. n.

A rather large greyish-white species with dark markings on the wing.

♂. Integument of body and appendages brownish.

Eye-bridges contiguous. Antennae 16-segmented, the first segment obconical, more than $1\frac{1}{2}$ times as long as wide, 3rd elongate amphora-shaped (Fig. 41), median segments with neck longer than basal bulb, 13th with a neck about half as long as the bulb, the latter with a long lateral process carrying a terminal sensory cone, 14th and 15th segments united, the 15th with a lateral process ending a sensory cone, 16th segment well separated from the others,



Psychoda amphorica sp. n. Figs. 41 to 46.

(41) base of antenna; (42) tip of antenna; (43) wing; (44) aedeagus and forceps from above; (45) cercopod, same scale; (46) subgenital plate of ♀, inside view.

ovoid, distinctly smaller than the preceding ones (Fig. 42). Ascods of the usual Y type with very elongate branches in pairs on segments 3 to 13.

Palpi and labium lobes not studied.

Wing ovate-lanceolate (Fig. 43), base of costa with two calli, origin of stem of anterior fork placed on apex of anterior basal cell, distance between the forks longer by one-half than that between the posterior fork and apex of basal cell. Vestiture: ground colour greyish-white, pale brown fasciae distributed as follows, one across the base between the level of apex of basal cell and posterior fork, this fascia extending on the anterior and posterior fringes, a second

transverse fascia widely interrupted in the middle past the middle of the wing at the level of the anterior fork, this fascia is wider on M_3 and it extends on both fringes, a third small sub-apical fascia also interrupted in the middle and extending on both fringes and finally a small dark patch just at the apex of the wing. These dark markings are not very conspicuous in this sex and when the wing vestiture is not in perfect condition, they may appear like three pairs of more or less extensive darkish patches on both margins of the wing. Rows of erect hairs on the whole length of the veins except on R_5 and M_4 where they are completely missing.

The legs are not marked, they appear rather dark on account of the colour of the integument.

Hypopygium (Figs. 44-45). 9th sternite in shape of a narrow band, coxites about twice as long as wide, rounded on the outside, styles almost twice as long, falcate, slightly incrassate at the base which does not carry ordinary hairs, numerous sensory setae on their whole length. Aedeagus symmetrical, parameres large, their apex blunt and provided with a small triangular projection on the outside. Cercopods $1\frac{1}{2}$ times as long as the 9th tergite, incrassate at the base but not bulbous, then gradually tapering towards the tip which carries one retinaculum one-third as long as the cercopod itself.

Wing length 3.1 mm.

♀. Similar to male, dark markings of wing much more conspicuous. Subgenital plate (Fig. 46) wider than long, ending in two well-defined lobes separated by a semicircular indentation; on the underside two large hairy lobes on each side of the median sensory organ which is cylindrical and carries two setulae at the tip.

RUWENZORI: Namwamba Valley, 8300-10,200 ft., 3 ♂ (incl. type), 1 ♀.

Psychoda bilobata sp. n.

A relatively large ochraceous-brown species with indistinct darker markings on the wings arranged as in *Ps. undulata*.

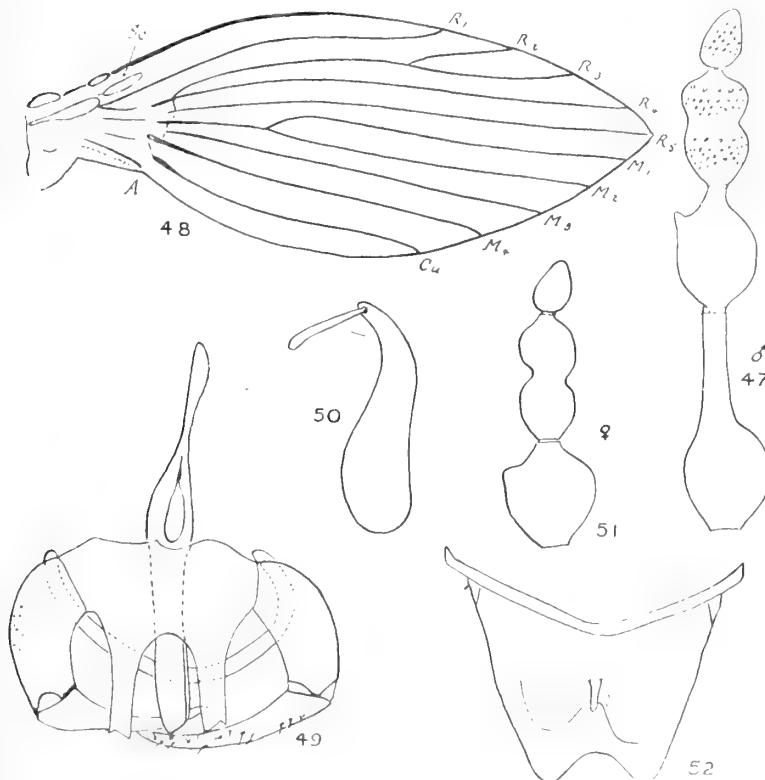
♂. Eye-bridges separated by a distance equal to three facets. Antennae 16-segmented, the first $1\frac{1}{2}$ times as long as wide, 3rd elongate amphora-shaped, somewhat longer than the 4th, median segments with the neck a little longer than the bulb, 13th with a very small neck and a small lateral process carrying a sensory cone, 14th and 15th united, only a shallow constriction between them, 16th smaller and olive-shaped. Ascoids of the usual Y type.

Palpi and labium not studied.

Wing ovate-lanceolate (Fig. 48), origin of stem of anterior fork on apex of basal cell, posterior fork nearer to apex of cell than to anterior cell. Vestiture brownish; erect hairs somewhat longer than usual, their rows reaching the tip

of veins, absent on R_5 and M_4 . Beyond middle of wing is a darker, rather indistinct pair of spots, one near the anterior the other near the posterior border, the latter just below the former; on the posterior border there is another smaller dark spot between the one just mentioned and the tip of the wing.

Legs brownish, without markings.



Psychoda bilobata sp. n. Figs. 47 to 52.

(47) tip of antenna of ♂; (48) wing; (49) aedeagus and forceps from below; (50) cercopod at same scale; (51) tip of the antenna of ♀; (52) subgenital plate of ♀, inside view.

Hypopygium (Figs. 49-50): coxites about twice as long as wide, rounded on the side, styles a little longer, regularly curved, only a little incrassate at the base; penis composed of two straight contiguous pieces, parameres well developed, with a blunt tip. Cercopods not longer than the 9th tergite, forficulate and conspicuously incrassate at the base but not bulbous there, its apex curved inwards and carrying a thin long retinaculum which meets that of the other cercopod.

Wing length 3.3 mm.

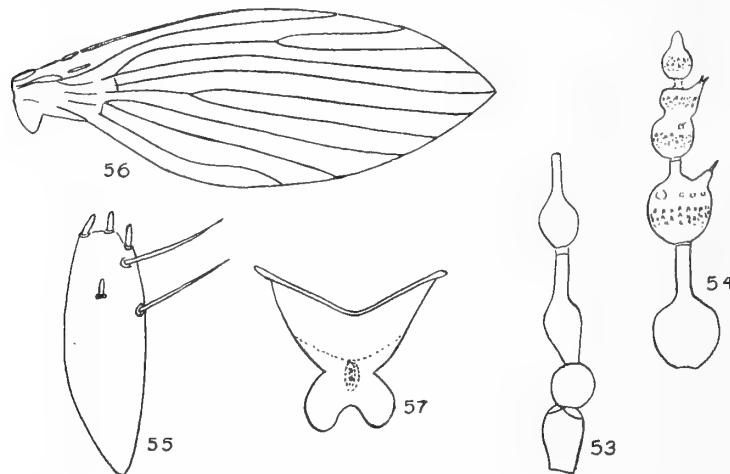
♀. Similar to male, the 13th antennal segment with practically no neck and with a very little developed lateral projection without cone, 14th and 15th segments relatively smaller (Fig. 51). Subgenital plate (Fig. 52) wider than long with two conspicuous lobes underneath between which the median cylindrical sensory organ is inserted.

RUWENZORI: Namwamba Valley, 13-14,000 ft., 1 ♂ (type), 1 ♀.

Psychoda albida sp. n.

A medium sized whitish species, the head and basal half of antennae dusky.

♀. Eye-bridges separated by the width of two facets. Antennae 16-segmented, 1st segment longer than wide by half, 3rd elongate amphora-shaped (Fig. 53), the following ones with spherical bulb and neck as long as bulb, the



Psychoda albida sp. n. Figs. 53 to 57.

(53) base of antenna of ♀; (54) tip of antenna; (55) labial lobe; (56) wing; (57) subgenital plate of ♀.

13th with a distinct small thin neck and an antero-lateral process carrying one sensory cone, 14th and 15th united, the latter with a process carrying two sensory cones, last segment pyriform (Fig. 54). Ascoids as usual Y-shaped, in pairs on segments 3 to 13.

Palpi formula: 10-13-11-16. Labial lobes (Fig. 55) with three terminal and one discal cone and two lateral setae.

Wing lanceolate (Fig. 56), two basal costal calli, origin of stem of anterior fork at apex of basal cell, posterior fork midway between the anterior one and

the basal cell. The vestiture of the wings is all rubbed off; it may not be uniformly whitish since the membrane exhibits a dusky area on R_5 at apex of basal cell and a very faint one near the tip.

Subgenital plate as long as wide (Fig. 57), although it appears rather elongate, a conspicuous constriction at the base of the lobes, which are well developed, and an internal median basal strut, which reaches the well-developed oval internal sensory organ. Ovipositor longer than the plate, curved and pointed.

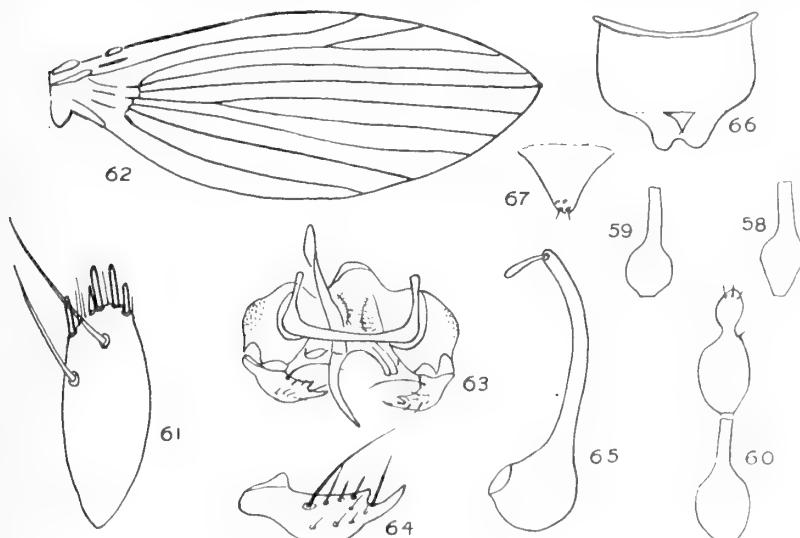
Wing-length 2.7 mm.

RUWENZORI: Namwamba Valley, 8300 ft., 1 ♀ (type).

Psychoda dentata sp. n.

A medium-sized brown species with uniform brown vestiture.

♂. Eye-bridges not contiguous, the distance between them equal to $1\frac{1}{2}$ facets. Antennae incomplete at tip (apparently 14-segmented as in the ♀),



Psychoda dentata sp.n. Figs. 58 to 67.

(58) third antennal segment; (59) a median segment; (60) tip of antenna; (61) labial lobe; (62) wing; (63) aedeagus and forceps from above; (64) style; (65) cercopod, same scale as Fig. 63; (66) subgenital plate of the ♀; (67) internal sensory organ of subgenital plate.

1st segment a little longer than broad, the 3rd somewhat amphora-shaped (Fig. 58) with neck as long as basal bulb, following segments with neck distinctly longer than basal bulb which is spherical (Fig. 59). Ascoids of the Y type, anterior branches conspicuously elongate.

Palpi with almost equal segments: 8-8-9-10. Lobe of the labium (Fig. 61) with five distal cones as well as a few fine setulae and two long lateral setae.

Wing lanceolate (Fig. 62), two calli at base of costa, origin of stem of R_2R_3 at apex of anterior basal cell, this one only a little longer than the posterior one; posterior fork nearer these cells than to the anterior fork.

Hypopygium (Fig. 63-65). Coxites short and wide, with a bulge on the outside, style incrassate in the middle, with a fine curved apex and a dent below it, internal lobes pubescent. Cercopods decidedly longer than the 9th tergite, with a pronounced basal bulb and a very long thin slightly curved shaft carrying one terminal retinaculum.

♀. Similar to ♂, same venation and similar labial lobes. The antennae are 14-segmented, the dimunitive ovoid 14th segment being united to the preceding one (Fig. 60), ascoids on 3rd to 13th segments of the usual Y type. Subgenital plate (Fig. 66) wider than long, with two small terminal lobes; median sensory organ triangular (Fig. 67) with four papillae, two of them with setulae.

Wing length: ♂ 2.77, ♀ 2.4 mm.

S.W. UGANDA: in crater of Mt. Muhavura, 13,500 ft. (Ford) on *Lobelia Wollastonii*, 1 ♂ (type); summit of Mt. Sabinio (Ford), 1 ♀ (allotype).

RUWENZORI: Namwamba valley; under stones by river bed. 1 ♀ (paratype).

This species may be fairly widespread in Africa. I have seen a female from Pretoria in the collection of the Hungarian Museum which has a similar subgenital plate with an internal triangular sensory organ (a quite unusual shape) and 14-segmented antennae of the same type as in *Ps. dentata*. However, as no male from that region has been seen I doubtfully refer it to this species.

Psychoda acuta sp. n.

A very small, uniformly greyish-brown species.

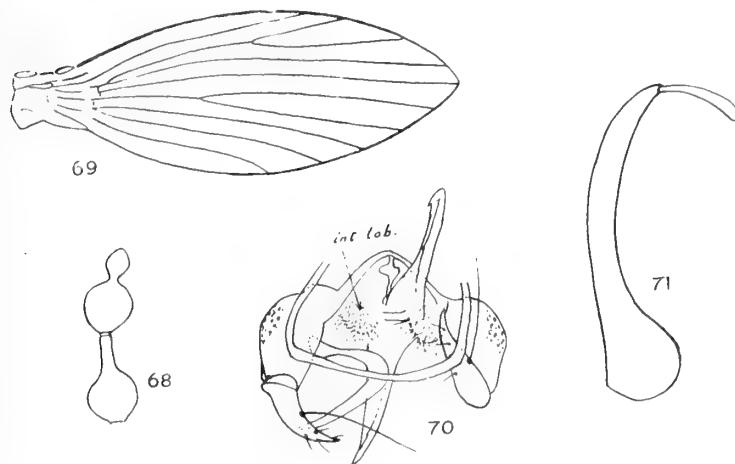
♂. Coloration of integument brown, vestiture uniformly brownish, more greyish on the appendages, especially on the legs.

Eye-bridges separated by a distance almost equal to the width of the bridges. Antennae 14-segmented, 1st not longer than wide, 3rd similar in shape to the following ones but neck somewhat shorter than basal bulb, median segments with neck a little longer than bulb; last two segments united together (Fig. 68), 14th small, olive-shaped. Ascoids Y-shaped, in pairs on segments 3 to 13.

The four segments of the palpi subequal to each other, first somewhat thinner than the others. Labial lobes with four terminal cones and two lateral setae.

Wing lanceolate (Fig. 69), two calli at base of costa; origin of stem of R_2R_3 well beyond apex of basal cell, posterior fork distinctly nearer the anterior one than to apex of basal cell. Vestiture without tuft; disposition of erect hairs on veins not ascertainable, they are absent or have been rubbed off.

Hypopygium (Figs. 70-71). Sternite very narrow, with squarish corners; coxites almost twice as long as wide, with a moderate bulge on the side; style shorter than the coxite, falcate, pointed, not incrassate at base, with one long bristle and 4-5 sensory setae on the distal half. Aedeagus composed of two pieces, a median elongate subtriangular pointed one and another lateral and



Psychoda acuta sp. n. Figs. 68 to 71.

(68) tip of antenna; (69) wing; (70) aedeagus and forceps from above; (71) cercopod at same scale.

hook-shaped one, the two internal lobes small and covered with long hairs; cercopods forficulate, with bulbous base and about three times as long as the 9th tergite; one single long retinaculum about one-quarter the length of the cercopod.

Wing-length 1.06 mm.

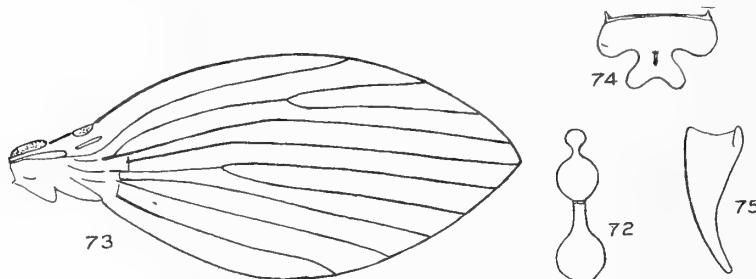
RUWENZORI: Kilembe, 4500 ft. 1 ♂ (type).

On account of the structure of the tip of the antennae and of the hypopygium this species comes very near *Ps. severini* Tonn.; it differs from it in the absence of the rudiment of a segment between the last two segments of the antennae, the structure of the aedeagus, and the shape of the style which is much more curved: also in the much smaller size.

Psychoda latipennis sp. n.

A very small, uniformly greyish-white species with rather wide wings.

♀. Eye-bridges contiguous. Antennae 14-segmented, 3rd of similar conformation to the following segments, necks of these somewhat shorter than basal bulb, 13th and 14th united, the constriction between them very much pronounced, 14th very small, spherical (Fig. 72). Ascoids Y-shaped, in pairs on segments 3 to 13, they are very delicate and could be easily overlooked.



Psychoda latipennis sp. n. Figs. 72 to 75.

(72) tip of antenna; (73) wing; (74) subgenital plate of ♀, inside view.
(75) ovipositor.

Palpi and labial lobes not studied.

Wing ovate-lanceolate (Fig. 73), relatively wide (half as wide as long), two basal costal calli present, origin of stem of anterior fork well before apex of anterior basal cell. Posterior fork nearer to anterior fork than to basal cell. Erect hairs partly rubbed off.

Subgenital plate (Fig. 74) with a bilobed cauda, inferior median sense organ subconical; ovipositor normal (Fig. 75), curved and pointed.

Wing-length 1.61 mm.

RUWENZORI: Kilembe, 4500 ft. 1 ♀ (type).

Psychoda plumosa sp. n.

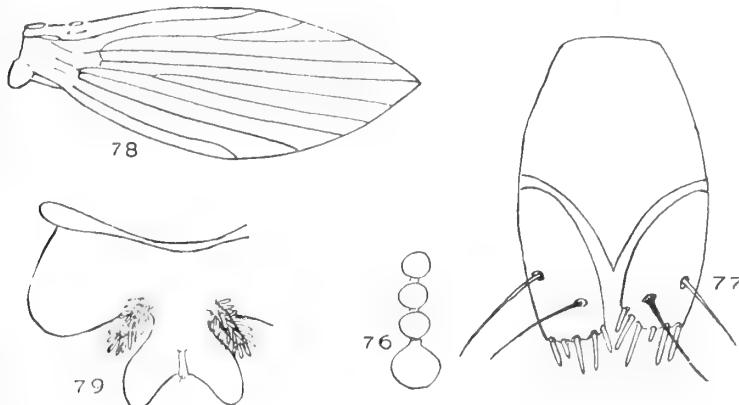
A very small species with uniform brownish-ochraceous vestiture.

♀. Distance between the eye-bridges equal to $1\frac{1}{2}$ facets. Antennae 16-segmented, 1st segment a little longer than wide, 3rd with spherical basal bulb, its neck shorter than the bulb, necks of following segments gradually longer, in the median segments they are as long as the bulb, 13th without neck, the last three subequal and not united to each other (Fig. 76). Ascoids of the usual Y type, present in pairs on segments 4 to 13.

Palpi with the first three segments subequal to each other, the fourth by one-quarter longer and a little thinner. Lobes of the labium (Fig. 77) with four or six terminal cones and two long lateral setae.

Wing lanceolate (Fig. 78), two calli at base of costa, origin of stem of anterior fork on apex of anterior basal cell, the latter markedly longer than the posterior one, posterior fork midway between anterior fork and basal cell.

Subgenital plate (Fig. 79) much wider than broad, the two lobes forming a median cordiform projection, inferior median sensory organ subcylindrical with



Psychoda plumosa sp. n. Figs. 76 to 79.

(76) tip of antenna of ♀; (77) labial lobe; (78) wing; (79) subgenital plate of ♀, inside view.

a few apical setulae ; on the internal side of the plate there is on each side of the base of the median projection a cylindrical process thickly covered with numerous digitations (no insertion pores at their base), a feature quite unique in this genus. Ovipositor normal, about twice as long as the plate.

Wing-length 1.59 mm.

RUWENZORI: Kilembe, 4500 ft. in light trap, 1 ♀ (type).

***Psychoda dubitata* sp. n.**

A fairly large blackish species with wide wings.

♂. Integument brown, that of the thorax ochraceous; vestiture uniformly dark brown.

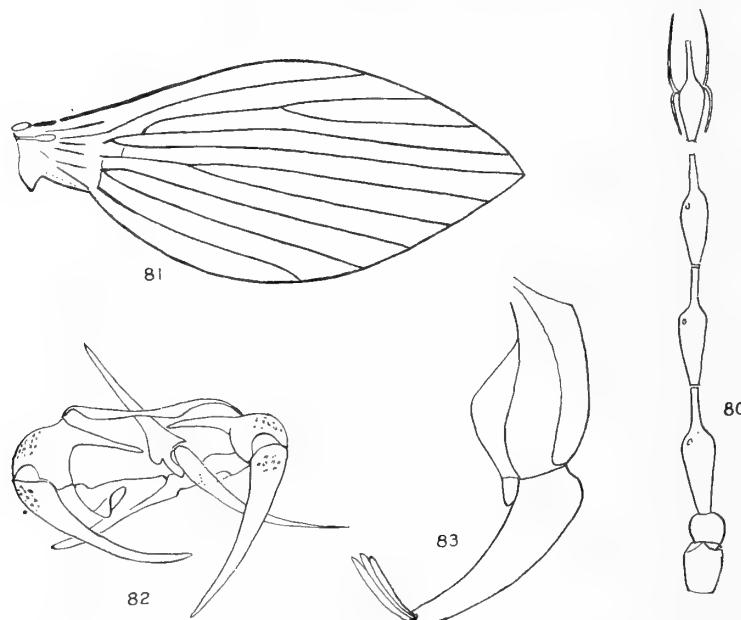
Eye-bridges wide and contiguous. Antennae (Fig. 80), incomplete, 1st segment somewhat longer than wide, 2nd small, hemispherical, 3rd and following ones very elongate amphora-shaped, their necks thin, not as long as the incrassate basal part; ascoids with only one anterior branch somewhat twisted at the base and a smaller posterior one (as in *Ps. lucifuga*), in pairs from segment 3 on.

Palpi not examined.

Wings (Fig. 81), ovate-lanceolate, broad, scarcely twice as long as wide.

Origin of stem of R_2R_3 well beyond apex of anterior basal cell, this one markedly longer than the posterior one; base of Cu distinctly connected with fork M_3M_4 . Posterior fork nearer to basal cell than to anterior fork. Vestiture uniform, no tuft; rows of erect hairs reaching the tips of veins, present on all of them except on R_5 and M_4 .

Hypopygium (Figs. 82-83). Coxites not longer than wide, with an internodorsal elongate projection, style elongate, claw-like, gradually tapering and



Psychoda dubitata sp. n. Figs. 80 to 83.
(80) base of antenna of ♂; (81) wing; (82) aedeagus and forceps from above;
(83) 9th tergite and cercopod, same scale.

gently curved. Aedeagus mainly composed of two pieces, one very elongate, thin and sharp and the other half as long and rather blunt; cercopod only a little longer than the 9th tergite, moderately incrassate at the base and carrying three subequal retinacula at its tip.

Wing-length 3.45 mm.

KENYA: Mt. Kinangop, 8000 ft., Aberdare Range, 1 ♂ (type).

As the tips of both antennae are missing it is impossible to decide with absolute certainty the generic position of this species; it is however without much doubt that I place it in *Psychoda* and near the group *lucifuga* Wlk. on account of the several retinacula on the cercopods and the shape of the ascoids with only one anterior branch which is twisted in a peculiar fashion at the base.

Clytocerus Eaton

C. africanus Tonn. was the only African species of this genus known so far; it is apparently a widely spread species, occurring in South Nigeria, and Eastern Africa (Katona). Now two additional related species have turned up in Dr. Edwards' material. In his new classification of the Psychodidae, Enderlein has created a new genus *Synseoda* with *S. flavitarsis* from Mt. Kilimanjaro, as the genotype. Although the description is scanty, I think that there can be no doubt that this species is a *Clytocerus*, probably either *C. africanus* or one of the species obtained by Dr. Edwards.

According to Enderlein, the only character distinguishing *Synseoda* from *Clytocerus* is the shorter anterior basal cell in the former; nothing is said about the structure of the antennae, they have apparently not been closely investigated by the author, otherwise he would have seen that those of the male are 15-segmented and possess a peculiar wavy brush on the third segment. This is highly characteristic of *Clytocerus* and species presenting this feature could not very well be separated from the genus. The shortness of the anterior basal cell cannot be held as a good generic character since the length of this cell varies according to species. In *C. dalei* it is not much longer than in most species of *Pericoma* and about equal to that of the two African species, yet it is so closely related to the other two European species that no distinguishing characters can be found in their genitalia.

Enderlein mentions that *Pericoma fenestrata* Tonn. (Chile) and *Per. bancrofti* Tonn. (Queensland) may belong to this genus *Synseoda*; this opinion is completely erroneous and is based only on a superficial examination of the figures published by me of the venation of these two species.

Clytocerus fasciatus sp. n.

A fairly large species with ochraceous-brown vestiture on the body, wings with darker brown markings, extensive whitish space in the fringe at the apex, legs dark with white tarsi.

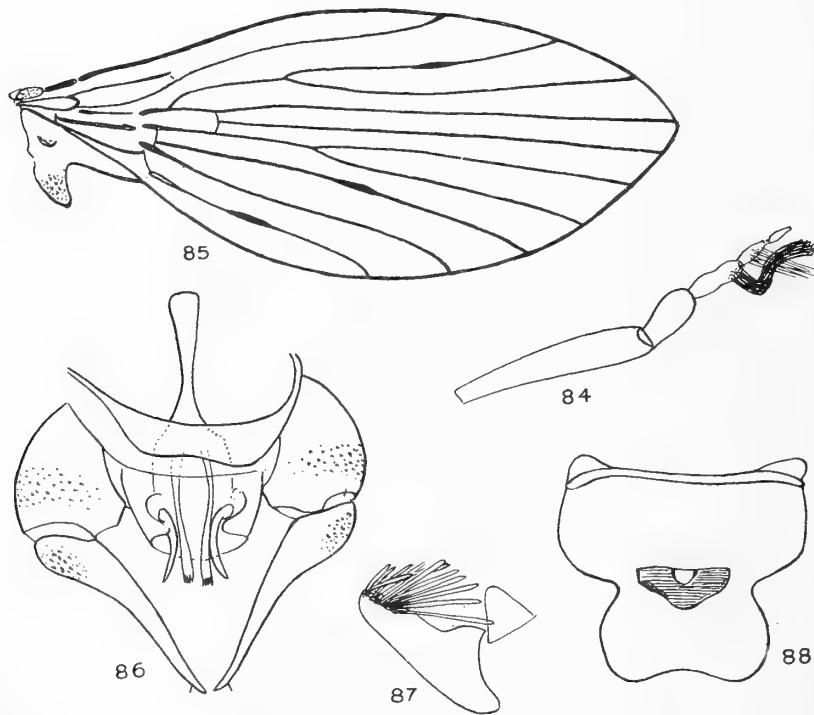
♂. Eye-bridges separated by a very small distance, barely equal to two facets; two distinct tufts of hairs on the frons. Antennae 15-segmented and of the usual type in the genus, the first three segments together (Fig. 84), about equal to the rest of the antennae, first $6\frac{1}{2}$ times as long as wide, 2nd ovoid about twice as long as wide, 3rd distinctly composed of two united segments with the typical wavy tuft of sensory hairs near the apex, the following ones fusiform. The first three segments with a dense vestiture of scales of the same colour as that of the body, verticils of the other segments darker.

Palpi about two-thirds as long as the antennae, 1st segment a little over half of the second, this and the third of equal length, the fourth thin and half

as long again as the third; vestiture somewhat darker than that of the body. Vesicles on the occiput of the usual shape, rather small and with a fairly large number of papillae.

Thorax with tufts of very dense short hairs on the anepisternum and hypopleuron.

Wing ovate-lanceolate (Fig. 85), tip of R_4 placed just a little above the pointed apex; membrane infuscated near the base and on the distal half except



Clytocerus fasciatus sp. n. Figs. 84 to 88.

(84) base of antenna of ♂; (85) wing; (86) aedeagus and forceps from above; (87) cercopod and 10th sternite, same scale; (88) subgenital plate of the ♀.

between the tips of most of the longitudinal veins; R_2 , M_3 and Cu with a distinct thickening on their middle especially noticeable on Cu . Origin of stem of anterior fork well before apex of anterior basal cell, at a distance equal to about twice the width of that cell. Hairs of base of costa, of alula, and rows of erect hairs on veins ochraceous-brown like those of the body, the others are dark brown, almost black, and form some small appressed tufts at the tip of most veins; on the disc there are four small dark tufts; one at the base of the anterior fork, the second on the middle of the branches of that fork, the third on

the middle of M_3 , and the last on the middle of Cu . Fringe dark except at apex between tips of R_2 and M_2 , where it is yellowish-white. The rows of erect hairs are absent on R_1 , R_5 and M_4 , they do not extend over the level of the two distal dark tufts on the other veins.

Legs. Vestiture of the base of the femora of the same colouration as that of the body, the rest and the tibiae brown; tarsi completely yellowish white.

Hypopygium (Figs. 86-87): 9th sternite relatively wide with a slight emargination in the middle; coxites not longer than wide, curved outwards, styles twice as long, rather bulbous at the base, the beak gradually tapering and slightly curved; aedeagus of rather complicated structure, with four pieces enclosed in a common capsule. Cercopods shorter than the 9th tergite, latter with two well-separated pseudospiracular openings, 12 to 13 retinacula, the more proximal ones being the longest, 10th tergite obconical with rounded apex.

Wing-length 3.3 mm.

♀. Similar to the male, antennae 16-segmented, first three segments equal together to half of the whole antennal length. Subgenital plate (Fig. 88) broader than long, its distal half narrower, constricted at the base, the two lobes separated only by a very shallow emargination; internal median sensory organ large and heavily sclerotized.

RUWENZORI: Mt. Karangora, 8-9000 ft., 2 ♂ (incl. type); Namwamba Valley, 8300 ft., 3 ♂ 3 ♀ (incl. allotype ♀); Mobuku Valley, 7300 ft., 1 ♀.

Clytocerus africanus Tonnour

Clytocerus africanus Tonnour, 1920, Rev. Zool. Afr., 8: 137.
(?) *Synseoda flavitarsis* Enderlein, 1937, D. Ent. Zeitschr., 1936: 92.

This species has been described in detail except for the genitalia. At my request Dr. Edwards has been kind enough to mount and draw the hypopygium of the type male, and to compare the specimen carefully with males of the species described below as *C. carbonarius* sp. n. He reports that *africanus* is markedly smaller (wing-length 2.2 mm. as against 3.5-4 mm.) and also appears to have relatively shorter antennal segments; the short scaly pile on the front of the mesonotum appears to be less dense, though this may be due to the fact that the type of *africanus* is somewhat rubbed. The hypopygia show very slight differences of somewhat doubtful specific value; the most obvious of these differences is that the pointed appendages of the aedeagus are somewhat more slender and less bent at the tips in the type of *africanus* (Fig. 91A) than in the specimen of *carbonarius* examined (Fig. 91).

Both *africanus* and *carbonarius* are much darker than the new species described above as *fasciatus*, with the vestiture mainly black and the wing-fringe not so extensively pale at apex.

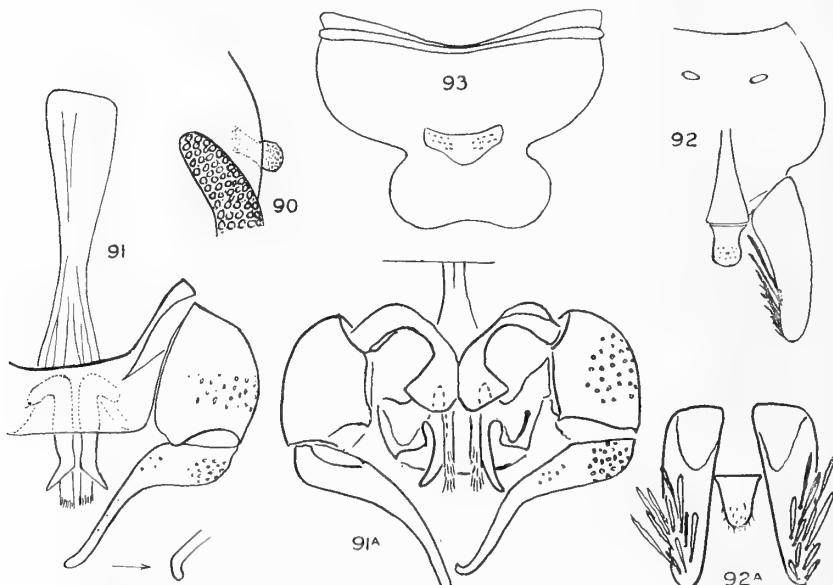
Clytocerus carbonarius sp. n.

Very similar to the preceding species but much larger.

♂. The vestiture on the body and legs except for the white tarsi is completely brownish black; hairs on the anterior part of the thorax dense, short, forming a velvety pile extending on the anepisterna.

Antennal flagellum pale, the structure of the antennae exactly as in *C. fasciatus*. Occipital vesicles as shown in Fig. 90.

The disposition of the discal tufts on the wings is also quite as in *C. fasciatus*, but the vestiture is here completely dark with the exception of the fringe, which



Clytocerus carbonarius sp. n. Figs. 90 to 93.
(90) occipital vesicle; (91) aedeagus, coxite and style; (92) 9th tergite and one cercopod from below; (93) subgenital plate of ♀.

C. africanus Tonn. (type ♂). Figs. 91a, 92a. (91a) aedeagus, coxites and styles; (92a) cercopods.

is ochraceous from the tip of R_3 to a little past the tip of M_2 . Venation as in *C. fasciatus*.

Hypopygium (Figs. 91-92): style with the distal part thinner than in *C. fasciatus*, its tip turned downwards; aedeagus also with four pieces but of different shape; tenth tergite subspherical.

Wing-length 3.5-4 mm.

♀. Similar to male; the first three antennal segments together distinctly shorter than the rest of the antenna. Subgenital plate as shown in Fig. 93; its median internal organ large and with a group of papillae on each side.

RUWENZORI: Namwamba Valley, 8300 ft., 5 ♂ 1 ♀ (incl. type ♂).

This species comes exceedingly near *C. africanus* Tonn., but is larger (3 instead of 2 mm.) and has the wing tip ochraceous instead of white.

It is possible that this is either a large form of *C. africanus* or Enderlein's *S. flavitarsis*; according to measurements given by that author (wing-length of ♂ 2.5-3 mm.), *flavitarsis* is intermediate in size between *africanus* and *carbonarius*.

Telmatoscopus albipunctatus (Williston)

This species is represented in the collection of Dr. Edwards by one male from Kilembe, 4500 ft. It is now known all over the world except for the temperate part of the palaearctic and nearctic regions and from the Australasian sub-region. Its region of origin is certainly the Ethiopian, wherefrom another very similar species, *T. fuscipennis* Tonn., is known.

Enderlein has recently (1936) erected the genus *Clogmia* to receive these two species, *albipunctatus* being indicated as the genotype—a *lapsus calami* made him write *albipennis* Willist. To my mind this genus has no value whatsoever; it cannot even be accepted as a subgenus.

The main generic characters given by Enderlein are: stem of anterior fork much shorter than *R*₂; *R*₅ at tip of wing; base of *Cu* missing; anterior fork more distal than the posterior one or above it; scales at the base of the wing.

All these characters except perhaps the first one are shared by many groups and have no generic value; even the position of *R*₅ at the tip of the wing is in some species found in one sex and not in the other.

As regards the first character: "stem of anterior fork much shorter than *R*₂," it may apply to *albipunctatus* but not to *fuscipennis* in which the forks are at the same level and in which the stem is only somewhat shorter than *R*₂, just as in *T. morulus* (Eat.), the genotype of *Telmatoscopus*.

Telm. squamifer Tonn. from Egypt is considered by Enderlein as a species of *Telmatoscopus*, yet *R*₅ ends at the tip of the wing and except for the somewhat longer stem of the anterior fork than in *T. fuscipennis* there is no reason why Enderlein should not have included it in his genus *Clogmia*.

Telmatoscopus pallidus (Tonnoir)

Psychoda pallida Tonnoir, 1922, Bull. Soc. ent. Egypt, 1922: 95.

This species was placed by me in *Psychoda* because at that time I had a less clear idea of the limits of that genus than I have now.

Since the last three segments of the 16-segmented antennae of *Ps. pallida* species are neither diminutive nor united to each other, and the flagellar

segments, though not decidedly bulbous nor eccentric at the base, have a distinct distal neck, I feel justified in placing it in the genus *Telmatoscopus*.

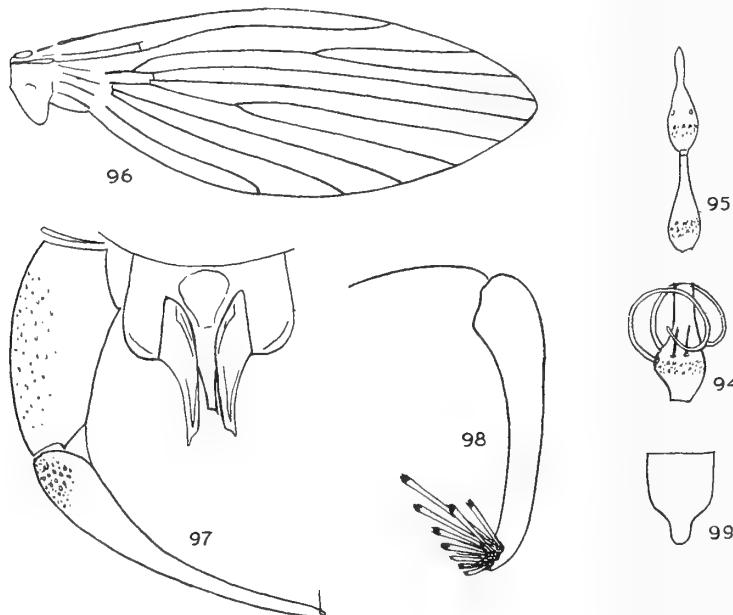
Its hypopygium is of the same type as that of the genotype *T. morulus* (Eat.) which also has the long coxites and styles and a symmetrical simple aedeagus.

This species was not included in the Ruwenzori material.

***Telmatoscopus edwardsi* sp. n.**

A medium-sized, completely brown species.

♂. Eye-bridges almost touching. Antennae half as long again as the width of the wing, 16-segmented, 1st segment subcylindrical, almost twice as long as wide, 2nd spherical, 3rd similar to the following ones but its neck just a little shorter, median segments typical of the genus (Fig. 94), with a bulge



Telmatoscopus edwardsi sp. n. Figs. 94 to 99.

(94) a median segment of antenna; (95) tip of antenna; (96) wing; (97) aedeagus, coxite and style; (98) cercopod, same scale; (99) 10th sternite.

on one side on which are inserted the two long spiraloid ascoids which are present on segments 3 to 16; last antennal segments more elongate, the 16th with a long bulb-shaped apiculus (Fig. 95); the verticils are thick and bell-shaped.

Palpi not examined.

Vestiture of thorax long and shaggy all over the mesonotum.

Wing ovate-lanceolate (Fig. 96) but its apex rounded; origin of stem of anterior fork well before apex of anterior basal cell, which is much longer than the posterior one; anterior fork beyond middle of wing, posterior fork half-way between the anterior one and the basal cell; apex of wing between the tips of R_4 and R_5 . Vestiture uniformly brown including the whole of the fringe; on the disc there is a rather indistinct dark tuft on the anterior fork and a darker patch formed by appressed hairs at the tip of Cu ; the rows of erect hairs, missing on R_1 , R_5 and M_4 , do not reach over a line going from the anterior fork and the tip of Cu .

Legs completely brown.

Hypopygium (Figs. 97-99). Coxite about twice as long as wide, style longer, gradually tapering, gently curved and with a distinct sensory seta at its apex. Aedeagus symmetrical, as shown in Fig. 97 (penis broken.) Cercopods about twice as long as the 9th tergite, gradually tapering and carrying at the apex a group of about 10 retinacula of various lengths, the tips of which are split into about 6 spinulae; the two pseudospiracles are contiguous.

Wing-length 3.8 mm.

RUWENZORI: Namwamba Valley, 10,200 ft., 1 ♂ (type).

Telmatoscopus fuscus sp. n.

A rather small, completely brown species with somewhat indistinct darker transverse fasciae on the wings.

♂. Eye-bridges almost touching. Antennae (Fig. 100) incomplete, 1st segment not quite twice as long as wide, second spherical, both relatively smaller than usual compared to those of the flagellum, 3rd shorter than the following ones which are eccentric and with the neck as long as the bulb. Ascoids in pairs, very large, fan-shaped with numerous branches (Fig. 101).

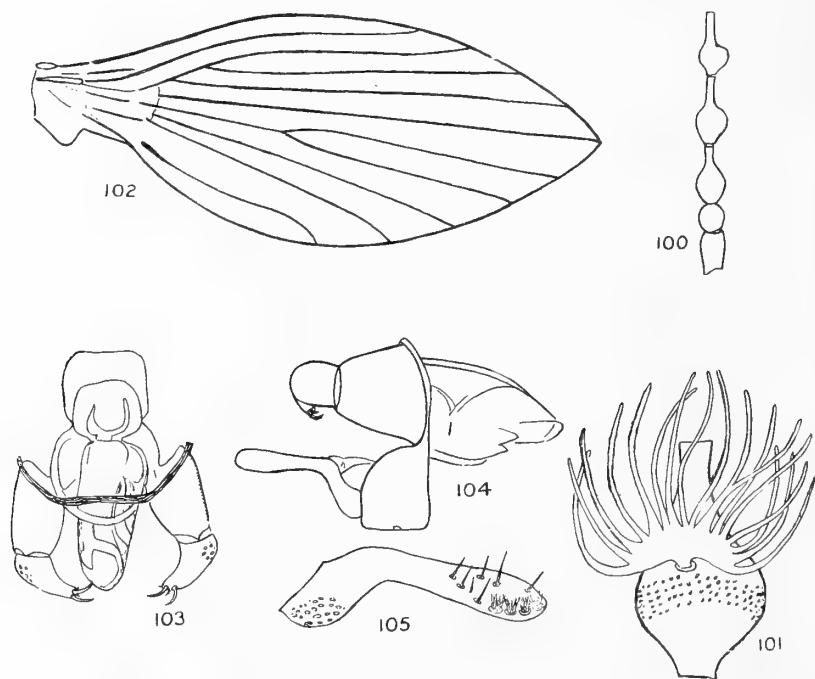
Palpi not studied.

Integument of the thorax ochraceous, paler than the vestiture.

Wings lanceolate (Fig. 102), fairly pointed at apex where R_5 ends; R_5 of the pectinated type; anterior fork well before the posterior one which is placed before the tip of Cu , Sc ending in R_1 , the two basal cells sub-equal. Vestiture including that of the fringe uniformly brown, rows of erect hairs absent on R_1 , R_5 and M_4 , not reaching over level of tip of R_1 on the other veins, and on Cu stopping distinctly before the tip of that vein; the appressed divaricate hairs on the veins beyond the rows of erect hairs are denser than elsewhere and thus form some darker fasciae across the wing from the level of the tip of R_1 .

Hypopygium (Figs. 103-104): Style short, not longer than the coxite, with

rounded blunt tip which carries two fairly strong curved sensory setae and a number of smaller ones, aedeagus asymmetrical, thick. 9th tergite very short, pseudo-spiracles contiguous. Cercopods of unusual shape, elbowed downwards



Telmatoscopus fuscus sp. n. Figs. 100 to 105.
 (100) base of antenna; (101) one segment of flagellum, only one ascoid shown;
 (102) wing; (103) aedeagus and forceps from above; (104) hypopygium from
 side; (105) cercopod from inside.

in their middle, the distal end gently club-shaped, no retinacula at apex but a few sensory setae on the internal side and a row of four round tufts.

Wing-length 2.5 mm.

RUWENZORI: Namwamba Valley, 6500 ft., 1 ♂ (type).

***Telmatoscopus pectinatus* sp. n.**

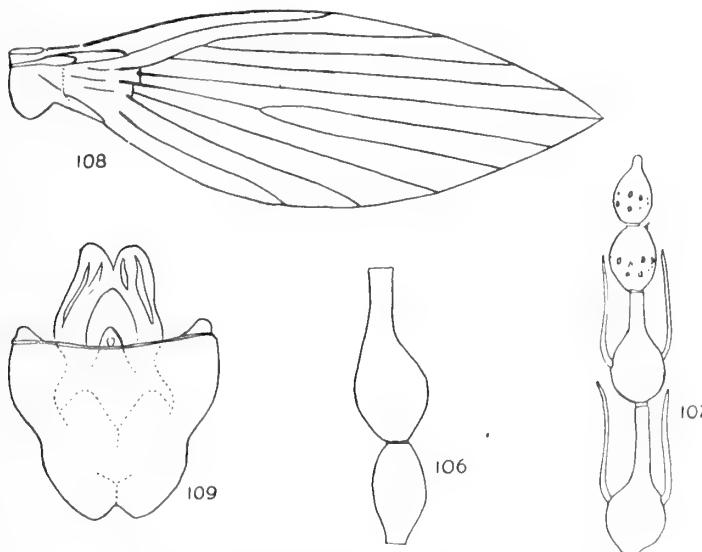
A medium-sized, uniformly brown species, wing without markings or darker tufts.

♀. Eyes separated by a distance equal to the bridge itself. Antennae 16-segmented, 1st segment about as long as wide, 3rd fusiform, short, equal to about half of the following segment (Fig. 106), its verticil very small, 4th to

14th segments with long neck and a pair of fairly long, straight ascoids, 15th ovoid, without neck but with subterminal sensory cone, 16th oval, with short apiculus, these last two segments distinctly smaller than the others (Fig. 107).

Palpi not studied.

Wings lanceolate (Fig. 108), rather elongate, and with sharp apex, *Sc* ending in *R₁*, *Rs* of the pectinate type, anterior fork very near the base, posterior fork before the middle and before the tip of *Cu*, anterior basal cell not very much longer than the posterior one. Vestiture uniformly brown, rows of erect hairs missing on *R₁*, *R₅* and *M₄*, extending almost to the end of the other veins.



Telmatoscopus pectinatus sp. n. Figs. 106 to 109

(106) base of antenna; (107) tip of antenna; (108) wing; (109) subgenital plate of ♀.

Subgenital plate (Fig. 109) almost as long as wide, its two terminal lobes separated by a very small indentation.

Wing-length 3 mm.

RUWENZORI: Namwamba Valley, 10,200 ft., 1 ♀ (type).

On account of the structure of the tip of the antennae and its venation this species is rather closely related to *T. revisendus* (Eat.) which has been designated by Enderlein as the genotype of his new genus *Mormia*; I propose to consider this genus only as a subgenus of *Telmatoscopus*.

T. pectinatus agrees with the genotype of *Mormia* in having a somewhat reduced third antennal segment and a 15th segment devoid of neck, but its

venation differs in the position of the anterior fork which is very near the base of the wing and consequently much before the level of the posterior fork; the contrary is the case in *T. advenus*, and this relative position of the forks has been chosen by Enderlein as the main generic character.

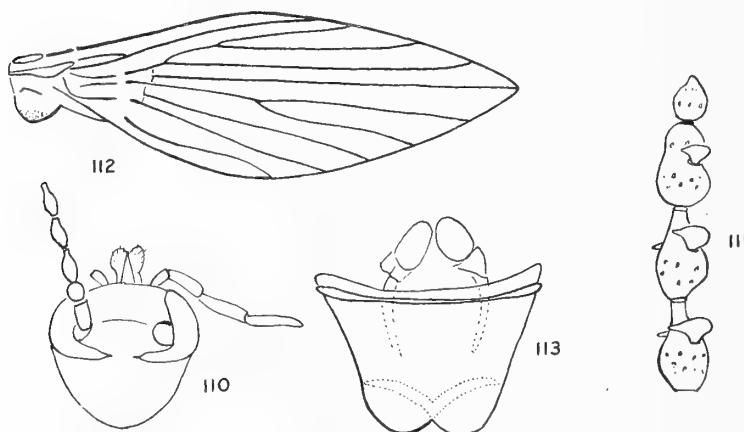
I cannot see my way yet to placing this species in *Mormia* until the male has been obtained and its antennae are shown to be provided with the characteristic port-hole organs on most of the basal segments of the flagellum.

T. pectinatus would appear to be related to *T. fuscus* here described, but there is no doubt that it cannot be the other sex of that species although the venation is almost identical; the structure of the base of the antennae seems to preclude it altogether (the tips are missing in *T. fuscus*) and also the much longer rows of erect hairs on the veins.

Telmatoscopus crassiascoidatus sp. n.

A small brownish species with darker tufts on the wings.

♀. Eye-bridges narrow, ending in points which are widely separated (Fig. 110). Antennae 15-segmented, 13 and 14 united, 15 sub-spherical with a short terminal apiculus (Fig. 111), 1st segment sub-cylindrical, about half as



Telmatoscopus crassiascoidatus sp. n. Figs. 110 to 113.
(110) head of ♀; (111) tip of the antenna; (112) wing; (113) subgenital plate.

long again as wide; basal segments of flagellum fusiform but with distinct distal neck, the following ones with sub-spherical bulbs and necks about half as long. Ascoids on segments 4 to 13 in pairs, bulbous, with a lateral beak, the beaks of a pair turned towards each other; the whole antenna half as long again as the width of wing.

Palpi with the first segment small, only a little longer than wide; the other almost equal to each other.

Integument of body and appendages very dark, almost black; vestiture of body ochraceous-brown. Legs of uniform dark colouration although in certain lights the vestiture may appear ochraceous.

Wing lanceolate (Fig. 112), narrow, very pointed at apex where R_5 ends. Sc ending in R_1 , Rs pectinate, origin of stem of the anterior fork well beyond apex of basal cell; posterior basal cell only a little shorter than the anterior one; anterior fork well before the posterior one, latter before tip of Cu . Vestiture ochraceous-brown and black; the erect hairs on the basal and median regions of the disc are ochraceous, the darker erect hairs in between forming a conspicuous dark fascia; after the rows of erect hairs, the divaricate dense appressed hairs of the disc also form two conspicuous dark fasciae, the posterior one being somewhat more distal than the anterior one; fringe completely dark.

Subgenital plate (Fig. 113), about as long as wide, the terminal lobes little developed. Ovipositor normal, curved and pointed, but not much longer than the subgenital plate.

Wing-length 1.61 mm.

KENYA: Mt. Elgon, 12-13,000 ft., on *Lobelia elgonensis*, 1 ♀ (type).

Brunettia Annandale

Enderlein has recently erected the new genus *Setomima* for one African species *S. lithocolleta* (1936) from North Cameron. This species, which is described only from colouration and a few points of venation, comes very near my *B. grahami* (1920) from Ashanti; it may indeed be the same species. Enderlein places *B. grahami* Tonn., *B. splendens* Tonn., and *B. pectinata* Tonn., in the genus *Parabrunettia* Brun. because in these species the anterior fork is more basal than the posterior one, yet he is not sure of the position of that fork in *S. lithocolleta* since he says in his diagnosis of the genus *Setomima*: " R_2+3 Gabelpunkt über dem M_1+2 Gabelpunkt (vielleicht ein Spur grundwärts, die sichere Feststellung ist durch die Beschuppung behindert.)" It is a pity he has not removed the scales of that part of the wing to make sure of the point; he might have found that the position of this anterior fork is the same in *S. lithocolleta* as in the other three species just mentioned and if it is nearly above the posterior one in his species it is because this posterior fork is nearer the base of the wing; the position of that fork varies according to species in this group. The character on which his genus *Setomima* is based is therefore one which has only a specific value.

I do not pretend that there is no ground for separating the African species of *Brunettia* from the Indian ones, but it should not be done on such a trifling character; the antennae and the genitalia afford some much better ones, but

as these characters are only evident in the males the grouping should only be of sub-generic order. Since the Indian species of *Brunettia* remain as yet imperfectly known, I shall for the present refrain from making any subdivisions except as regards the species with the wing membrane covered with hairs instead of broad imbricated scales. Two of these are dealt with in this paper: *B. albonotata* Brun. and *B. obscura* sp. n.

The first one has *B. indica* Eaton as a synonym and *B. indica* has recently been made the genotype of *Parabrunettia* Brun. by Enderlein. This is another instance of Enderlein's bad luck in designating genotypes since Brunetti had already selected one (1912, p. 251) which is *B. squamipennis* (Brun.). This species has both sides of the wing membrane covered with broad scales and should therefore remain with *Brunettia* although it has wings with the tip of R_5 ending at their apex; this character has definitely no generic value.

For all the species of this group which have the wing membrane covered with hairs on both sides (and sometimes with scales at the base below) and with 15 or 16 segmented antennae I propose the new sub-genus *Trichobrunettia* with *T. albonotata* Brun. (= *indica* Eat.) as subgenotype. I do not see my way to make it a full genus because there is really no very clear-cut limit between *Brunettia* and *Trichobrunettia*; the amount of broad scales on the wing membrane of some species being sometimes more, sometimes less than that of the hairs.

The new species *B. obscura* here described does not fit very well in this new subgenus on account of the sexual dimorphism in the antenna and the shape of the wings and also in the structure of the genitalia of the ♂ which is more like those of *Pericoma* without the long retinacula with peculiarly shaped tip. Yet I shall put it for the present in *Trichobrunettia* until further material comes to hand from Africa.

***Brunettia splendens* Tonnoir**

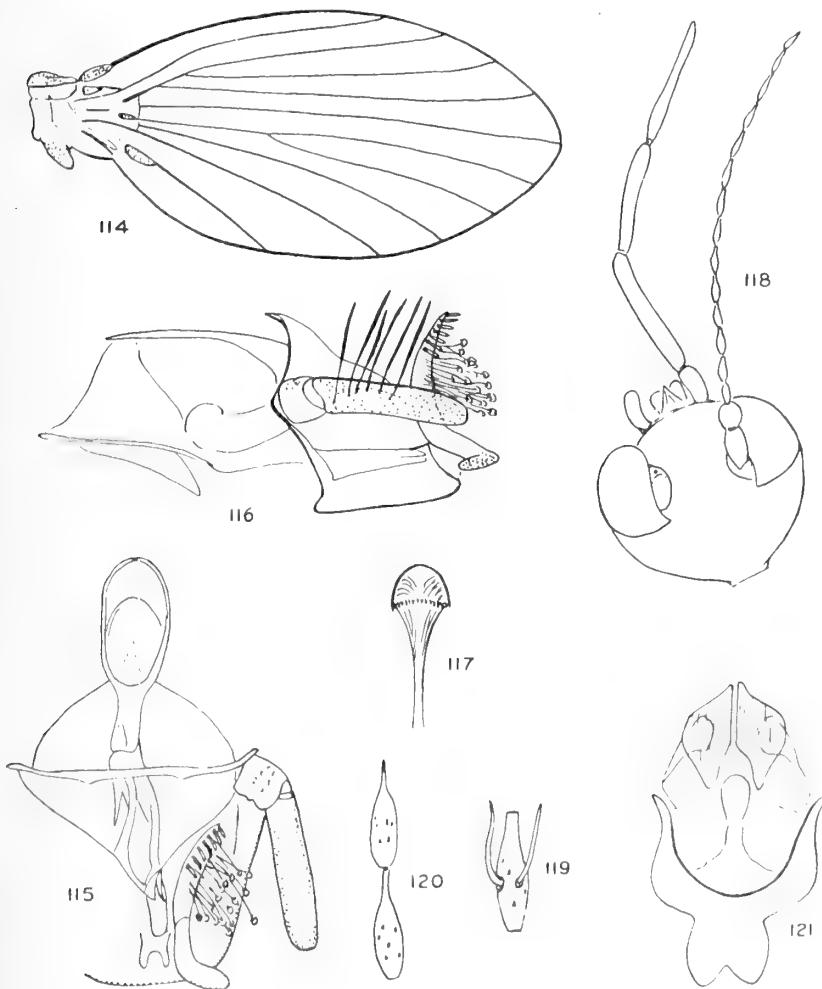
B. splendens Tonnoir, 1920, Rev. Zool. Afr., 8: 140.

This species was described from one male only from Ashanti; I have seen it since from various parts of the Congo, its distribution must be very wide since it has now been found by Dr. Edwards on the Ruwenzori where he collected two males only. This gives me an opportunity of making a closer study of this species since the holotype had not been dissected. I also add the description of the female which was included in a small series of males collected in the Belgian Congo by M. J. Ghesquière.

♂. Eyes reniform, with only a trace of a bridge, the distance between them equal to one-third of the width of the head. The antennae have already been figured: they are very remarkable on account of the extraordinary development of the ascoids, the basal ones being equal to about half the length of the

whole antenna, much more sclerotized than usual, and exhibiting a large number of annular ridges which gives them a segmented appearance.

Palpi as long as the antennae, the first segment equal to one-third of the second; the last three subequal to each other.



Brunettia splendens Tonn. Figs. 114 to 121

(114) wing of ♂; (115) part of hypopygium seen from above; (116) hypopygium seen from the side; (117) tip of clubbed hairs of the cercopods; (118) head of ♀;

(119) median segment of antenna; (120) tip of antenna.

(121) subgenital plate of the ♀.

Wing-venation as shown in Fig. 114, the anterior fork is exceedingly close to the base.

Hypopygium (Figs. 116-117): coxites as long as wide, style four times as long as wide, cylindrical with rounded tip and carrying all along its length fairly dense elongate narrow scales pointing upwards. Cercopods not longer than the 9th tergite, curved outwards and with a basal prolongation directed downwards and outwards, the concave side of the cercopods carry a bundle of about 7 curved retinacula arranged in a single row from the apex and farther down about 15 long clubbed sensory hairs; aedeagus large, asymmetrical and complicated as shown in Fig. 115.

Wing-length 3 mm.

♀. Differs from the male in the structure of the antennae and the coloration and disposition of the wing markings.

The eyes are wider apart (Fig. 118); the third segment of the antennae is fusiform and shorter than the following one which is amphora-shaped, the median ones having a more developed neck, their basal bulb is elongate, not spherical as in the male (Figs. 119 and 120). Ascoids short almost straight, in pairs on segments 4 to 14.

Vestiture of thorax greyish-brown, without white markings as in the male.

Wing-shape and venation exactly as in the male; vestiture formed of dense brown scales, the metallic scales are silvery without green tinge; they are rather dense on the basal third of the wing, farther on, past the middle there are two not very conspicuous fasciae of these scales, one just past the middle of the disc and one on the anterior border near the tip of R_2 , from there on towards the apex and the posterior border there are a number of scattered metallic scales in no definite order. The costal callus-tuft is composed of long and numerous brownish-grey hairs and there are similar hairs on the wing in the vicinity of the basal cells. Fringe with greyish reflections but without any definite pale parts.

Legs dark, extreme tip of mid and posterior tibiae with narrow white margin; anterior protarsi with whitish base and apex; distal half of second segment also white, on the other legs the protarsi with the distal third and the second segment almost completely white dorsally.

Subgenital plate (Fig. 121), with a narrow curved base, the two lobes forming a median projection, emargination between the lobes subtriangular, internal armature strongly developed.

BELGIAN CONGO: Eala, xi.1934 (Ghesquière) in coll. Nat. Hist. Museum, Brussels, allotype ♀.

RUWENZORI: Namwamba Valley, Kilembe, 4500 ft., 2 ♂.

Brunettia gloriosa sp. n.

A dark brown species with a few small groups of iridescent bluish scales on the wings; male with pectinate antennae.

♂. Eyes with small, narrow frontal bridges, distance between them equal to about the quarter of the head, the bridges prolonged towards each other by a suture. Antennae (Fig. 122) brown, with distal part of 1st segment and whole 2nd segment ochraceous, nearly as long as width of wing, 16-segmented, 1st about twice as long as wide, this and 2nd with short greyish and brownish hairs, 3rd spherical, following ones gradually more elongate and with a more distinct neck, last with a very long apiculus. All segments of flagellum provided with a pair of very long and strongly sclerotized ascoids, not diametrically opposed but their points of insertion somewhat approximate on the ventral side so that they point more or less downwards, 4th segment provided with a third ascoid pointing downwards (it is present on both antennae and therefore does not seem to be an abnormality); the ventral side of the flagellar segments carry also a number of bristles as follows; several small ones on segment 3, two rather long ones on 4th and one long one on 5th to 12th; on the upper side of all segments there is a number of small straight hairs.

Palpi not examined.

Vestiture of the thorax missing in part, but appearing to be completely brown; no apparent alluring organs on the side of the thorax.

Wing oval, somewhat acuminate at the tip of R_5 ; venation as shown in Fig. 123. Rs of the pectinate type, anterior fork quite near the base, posterior fork placed just a little after, that is, well before the tip of Cu . Vestiture composed above and below of very closely imbricated bronzy-brown scales, some of which (when seen at $\times 50$) are distinctly darker and larger than the others. On the upper side of wing there are a few groups of metallic iridescent bluish-green scales; there appear to be five main groups of these scales: two at the base, one in the centre of the disc, one just below that on the posterior border between the tips of M_4 and Cu , and the fifth near the anterior border in the region of the tip of R_2 ; furthermore there are a very few scattered isolated metallic scales above and also more distally than the spot 4. Wing fringe uniformly dark yet exhibiting some ochraceous shifting reflections according to lighting.

Legs brown, with a good admixture of greyish-white scales and hairs. Anterior legs rather dark except on the posterior side and the antero-ventral basal fringe of the tibiae, base and tip of basitarsi and tip of second segment very slightly marked with white on the posterior side only; mid tibiae with whitish grey posterior side near the tip; hind tibiae fairly extensively whitish all along its anterior side, some hairs of its long anterior and posterior fringe

also white; mid- and hind-tarsi with the base and tip of the basitarsi and the whole of the second segment silvery white dorsally.

Vestiture of the abdomen mostly composed of very dense appressed scales. Hypopygium (Figs. 124-127): coxites about twice as long as wide, curved outwards, styles three times as long as wide, gently curved and gradually tapering to the blunt apex which carries a fairly long sensory seta; aedeagus asymmetrical, composed of two pieces enveloped in a broad sheath which is at base completely united with the narrow sternite by a membrane. Cercopod with a bulky basal extension, its distal half thin and somewhat turned inwards, its tip with a row of 7 retinacula, its middle with a dark, more or less oval plate, carrying about 50 long-clubbed sensory hairs (Fig. 129); the cercopods are not longer than the styles.

Wing-length 3.6 mm.

♀. Antennae completely brown, somewhat longer than those of the male, 3rd segment fusiform (Fig. 128), shorter by one-third than the 4th, this and the following ones elongate-fusiform with a distal neck, the last one with an apiculus ending in a sensory cone (Fig. 130). Ascoids rather short, simple, almost straight, in pairs on segments 4 to 14 (Fig. 129). The hairs of the flagellum are scanty and do not form any campanulate verticils.

Vestiture of frons, vertex and disc of mesothorax grey; abdomen with dense appressed bronzy scales and black tufts of hairs at the base and tip. Legs dark, the tarsi marked with white as in the male.

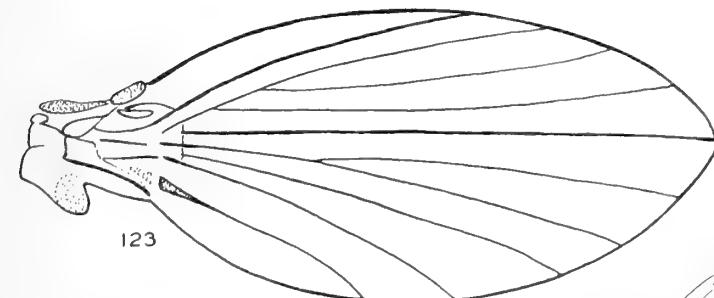
The wing venation is exactly as in the male but the markings of iridescent scales are different; there is a large group of them on the basal quarter and five other groups on the distal half: three on the posterior border, one in the middle of the disc and one on the anterior border below the tip of R_2 in the ♀ paratype; this distal marking varies somewhat in extent and position.

Subgenital plate (Fig. 131) with two terminal semicircular lobes heavily sclerotized, the internal median sensory organ large and also strongly sclerotized. Ovipositor (Fig. 132), not much longer than the plate.

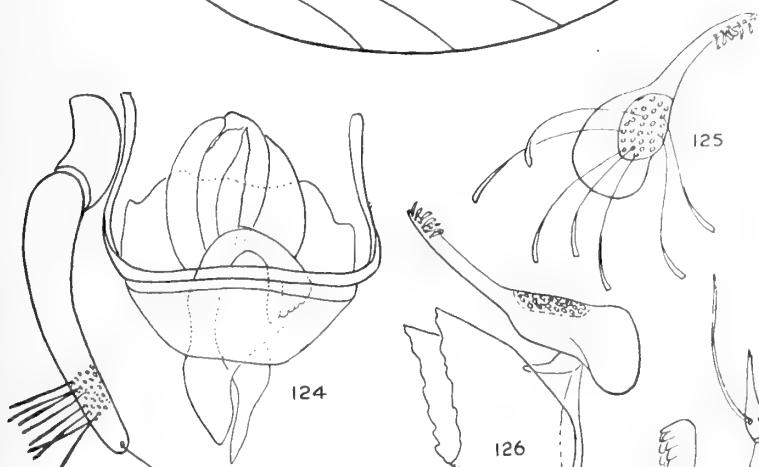
RUWENZORI: Kilembe, 4500 ft., on foliage near a tree with a water-bearing cavity, 1 ♂ (type) 2 ♀.

Trichobrunettia subgen. n.

The subgenus has been defined above (p. 70), as comprising the species of *Brunettia* in which the scales of the wing membrane have been replaced by hairs. However, as in many species of the Psychodinae, there may be some scales at the base of the wing below which extend more or less to the middle but usually remain confined to the basal quarter. The antennae are either 15- or 16-segmented and the flagellar segments are usually like those of *Telmatoscopus*. The last few segments are not diminutive as in *Trichopsychoda*. The subgenotype is the following species.



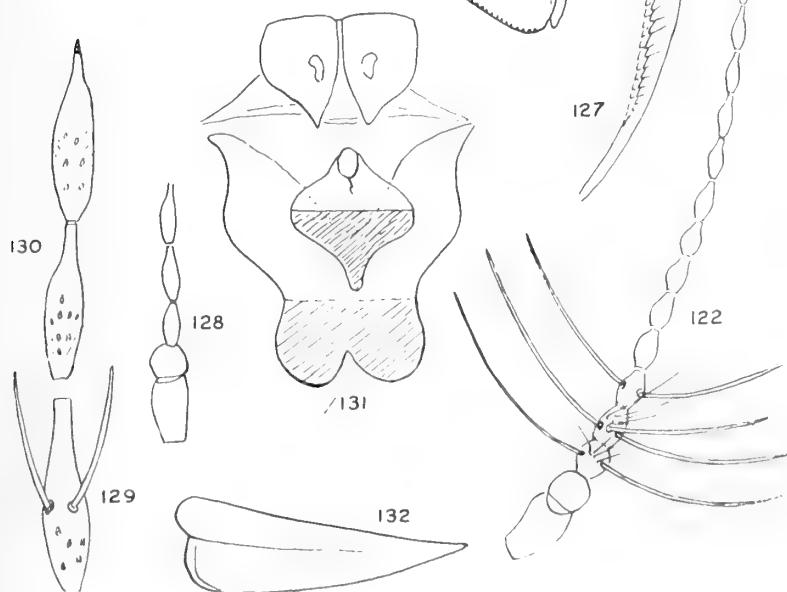
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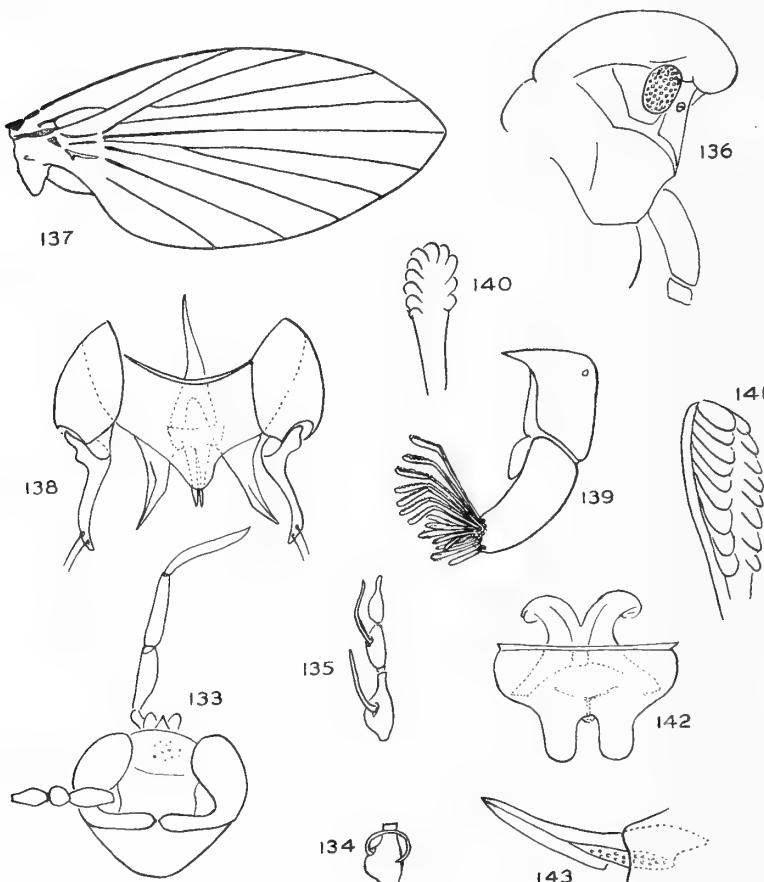


Brunettia gloriosa sp. n. Figs. 122 to 132.

(122) antenna of ♂, ascoids only partly represented; (123) wing; (124) aedeagus, coxite and style; (125) cercopod seen from behind, same scale; (126) part of oth tergite and cercopod seen from side; (127) tip of long clubbed hairs of cercopods; (128) base of the antenna of ♀; (129) a median antennal segment with ascoids; (130) tip of antenna; (131) subgenital plate of ♀, inside view; (132) ovipositor.

Brunettia (Trichobrunettia) albonotata (Brun.)*Psychoda albonotata* Brunetti, 1908, Rec. Ind. Mus.: 373.*Parabrunettia 9-notata* Brunetti, 1911, Rec. Ind. Mus. 4: 313.*Brunettia indica* Eaton, 1913, Trans. Linn. Soc. London: 424.*Psychoda duripuncta*, Curran.

This species is represented in Dr. Edwards' Ruwenzori collection by four specimens from Kilembe. It is exceedingly widespread in the tropics; the West Indies, Africa, India, Malaya and Formosa; strange to say it has not spread to Australia yet.



Brunettia albonotata Brun. Figs. 133 to 143.

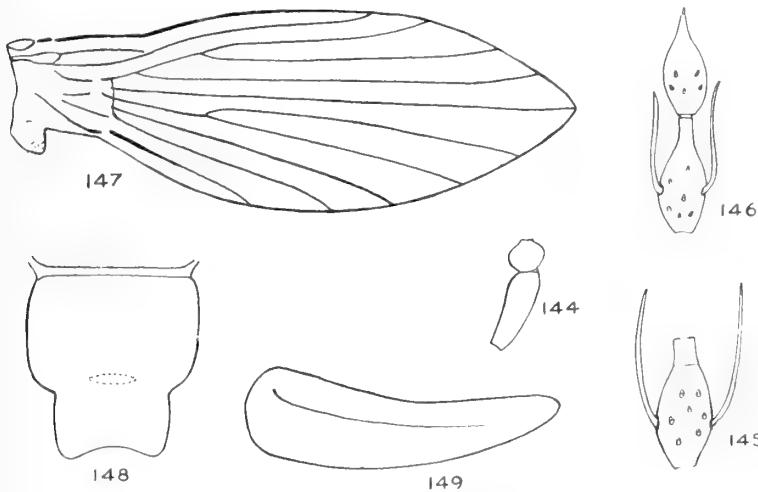
(133) head of ♂; (134) a median segment of flagellum; (135) tip of the antenna of ♂; (136) side view of thorax of ♂ showing sense organ; (137) wing; (138) aedeagus and forceps from above; (139) 9th tergite and cercopod from the side; (140 and 141) tips of retinacula; (142) subgenital plate of ♀; (143) ovipositor.

Since it is a very common species likely to be redescribed again I am giving here a few drawings (Fig. 133-143) of the wings, antennae and the genitalia to supplement and correct those of Eaton; the radius is not broken as he shows in his Fig. 2a.

There is in the male on the anepisternum an oval sensory plate dotted with very numerous papillae (Fig. 136); such a scent organ had not yet been recorded in *Brunettia*.

***Brunettia (Trichobrunettia) obscura* sp. n.**

A medium-sized brown species, with mottled wings whose membrane is not covered with scales but only with hairs.



Brunettia obscura sp. n. Figs. 144 to 149.

(144) base of antenna of ♀; (145) median segment of antenna with ascoids; (146) tip of antenna of ♀; (147) wing of ♀; (148) subgenital plate of ♀; (149) ovipositor.

♀. Integument ochraceous-brown.

Eyes widely separated, without bridges. Antennae 16-segmented, somewhat longer than the width of the wing: 1st segment about three times as long as wide (Fig. 144); the following ones rather short, fusiform but with a distinct short neck (Fig. 145), last one with an apiculus ending in a sensory cone (Fig. 146); hairs of the verticils scanty; ascoids fairly long, unbranched, gently curved, in pairs on segments 3 to 14.

Palpi not examined; face more elongate than usual.

Vestiture of the head and thorax brown, that of the abdomen whitish except at the base where it is brown. Integument ochraceous-brown.

Legs: Femora brown with the anterior side paler, knees narrowly white; tibiae gradually darker towards the apex with paler scales all along the posterior side; protarsi completely white, other segments brown.

Wings lanceolate (Fig. 147), almost three times as long as wide, pointed at the tip of R_5 ; Rs of the pectinate type; anterior fork near the base, posterior one just a shade more distal and well before the tip of Cu ; both basal cells of equal length. Wing-membrane infuscated, with some clear spaces at the base, in the region of the forks, and round the margin between the tips of most of the veins. Vestiture brown; erect bristly hairs on the veins and appressed fine hairs on the membrane, with white markings as follows: a tuft of white hairs on the basal cells followed by rows of erect brown hairs on all the veins except R_1 , these rows end towards the middle of the disc and on Cu they end distinctly before its tip; in this area of brown erect hairs there are three small patches of white erect hairs, one beyond each fork and one on the middle of Cu , then four very small tufts at the end of the rows of erect bristly hairs, those on R_2 and M_2 are at the same level and a little further distally than those on R_4 and M_1 which are both at the same level. The appressed white hairs of the membrane form very small white spots between the tips of R_2 , R_3 , R_4 , M_1 , M_2 , M_3 , M_4 and Cu , six in all. Fringe brown with three very small white tufts: one at the tip of the wing, one at the tip of M_3 and the last one on the costa just above the level of the anterior fork.

Subgenital plate subquadrate (Fig. 148), the two terminal lobes not very distinctly separated; ovipositor normal (Fig. 149).

Wing-length 3 mm.

RUWENZORI: Kilembe 4500 ft., 1 ♀ (type).

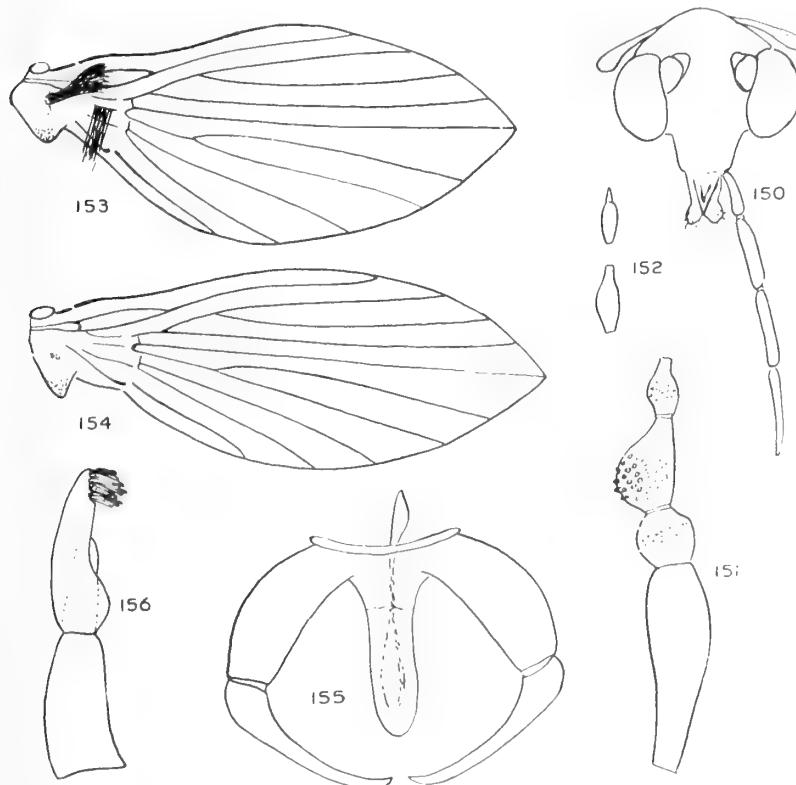
I have seen a fairly large series of specimens from Lake Magera (Parc National Albert) which may be referred to this species. Unfortunately, they are in very bad condition as regards the vestiture which is almost completely rubbed off; however, what remains of it, especially on the legs, corresponds with that of *B. obscura*. Furthermore, the morphological features of the terminalia, the antennae and venation of the females from Lake Magera are in every point the same as those of *B. obscura* so that there is a great probability that they belong to the same species. One must however remember that among the Psychodinae there are many species which are perfectly distinct in the males but are on the other hand completely indistinguishable in the females.

As the vestiture fails the males can only be described in respect of their morphological features which are as follows:

Eyes as in the female, two elongate club-shaped organs under the head (Fig. 150), fairly stiff as in *Telmatoscopus soleatus* (not vesicular as in *Clytocerus ocellaris*) and covered with very numerous rather indistinct papillae and microscopic pubescence.

Antennae 16-segmented, not much longer than the width of the wing

(54: 50); the first three segments (Fig. 151), markedly bigger than the following ones, the first club-shaped about four times as long as wide, 3rd conspicuously bulging on one side and with stiffer, thicker and more numerous bristles on that part, 4th smaller and also somewhat eccentric and with some thicker bristles; the following ones fusiform their distal part thinner, 16th ovoid (Fig. 152), with



Brunettia obscura sp. n. (contd.) Figs. 150-156.

(150) head of ♂; (151) base of the antenna of ♂; (152) median and terminal segments, same scale as Fig. 151; (153) wing of ♂; (154) wing of a ♀ from same locality, same scale; (155) aedeagus and forceps from above; (156) 9th tergite and cercopod from side.

a rather large terminal cone. Verticils with rather scanty hairs not forming any campanula. Ascoids thin, simple, in pairs on segments 4 to 16.

Palpi almost as long as the antennae, formula: 8-12-12-15.

Wing relatively broader than in the female (cf. Figs. 153-154), with tufts of undulated (sensory?) hairs right at the base and a tuft of straight finer hairs on the base of M_2 ; venation as in the female; membrane infuscated at the tip of the veins and in the region of Cu .

Hypopygium (Figs. 155-156): coxites about twice as long as wide, curved on the side, styles a little longer, thin, little incrassate at the base, tapering only at the tip; aedeagus simple, subcylindrical, fairly long; cercopods only as long as the 9th tergite, almost straight with about ten retinacula of equal length.

Allotype ♂ and paratype ♂♂ and ♀♀ Parc National Albert, Lake Magera, 3-6.iii.1934 (de Witte), in collection of the Congo Museum, Tervueren.

R E F E R E N C E S

Alexander, C.P. 1929. A revision of the American two-winged flies of the Psychodid subfamily Bruchomyiinae. Proc. U.S. Nation. Mus., 75: Art 7, 1-9.

Annandale, N. 1910. A new genus of Psychodid Diptera from the Himalayas and Travancore. Rec. Ind. Mus. 5: 141-144.

Brunetti, E. 1912. The Fauna of British India. Psychodidae, Diptera Nematocera.

Eaton, A. E. 1904. New genera of European Psychodidae. Entom. Month. Mag., 40: 55-59.
1912. Psychodidae of the Seychelles. Trans. Linn. Soc. London, 15: 423-432.

Enderlein, G. 1937. Klassification der Psychodiden (Dipt.). Deutsch. Ent. Zeit., 1936: 81-112.

Tonnoir, A. L. 1920. Notes sur quelques Psychodides africains. Rev. Zool. Afric., 8: 127-147.
1921. Contribution à l'étude des Psychodides d'Afrique. Bull. Soc. Ent. Egypte, 6: 80-112.
1922. Notes sur le genre Nemopalpus et description d'une espèce nouvelle. Ann. Soc. ent. Belg., 62: 126-136.

Plate XXIII

RUWENZORI

Stream in Namwamba Valley at 10,000 feet
Habitat of *Psychoda maxima* Tonn. and other species





Plate XXIV

RUWENZORI

Stream in Namwamba Valley near Kilembe 4500 feet

Habitat of *Brunettia gloriosa* Tonn







